

# **EXHIBIT 1**

**TO  
COMPLAINT FOR FALSE  
MARKING, TORTIOUS  
INTERFERENCE WITH  
CONTRACT, INTENTIONAL  
INTERFERENCE WITH  
ECONOMIC ADVANTAGE, AND  
UNFAIR COMPETITION**

# Kenyon&Kenyon

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May 13, 2014

**By Federal Express and email (Chris@life360.com)**

Mr. Chris Hulls  
Life360  
539 Bryant St., Suite 402  
San Francisco, CA 94107

**Re: Advanced Ground Information Systems, Inc. ("AGIS")**

Dear Mr. Hulls:

We represent AGIS, and write concerning Life360's direct and indirect infringement of AGIS's patents, including U.S. Patent Numbers 7,031,728; 7,672,681; 7,764,954; and 8,126,441.

For example, use of Life360's software application infringes: claim 7 of the '728 patent by displaying users' locations and facilitating rapid communication among them; claim 5 of the '681 patent by enabling a user to change his profile across a network of users; claim 1 of the '954 patent by displaying users' locations, facilitating rapid communication, and allowing maps to be downloaded from a network server; and claim 1 of the '441 patent by establishing a polling network among groups of users and displaying users' locations. Life360 induces others to use its software application in an infringing manner by, e.g., providing instructions on its website and on the website of other distributors of its product. In addition to providing information on how to create and join "circles" and to actively poll other users for location information, Life360's support website instructs users to communicate by touching symbols on a map. See Life360 Website at <https://www.life360.com/support/>.

AGIS is willing to discuss royalty-bearing license terms, but in the absence of a license, Life360 and its customers must cease and desist from further infringement.

We look forward to hearing a response from you by noon this Friday, May 16.

Best regards,



Thomas R. Makin

# **EXHIBIT 2**

**TO  
COMPLAINT FOR FALSE  
MARKING, TORTIOUS  
INTERFERENCE WITH  
CONTRACT, INTENTIONAL  
INTERFERENCE WITH  
ECONOMIC ADVANTAGE, AND  
UNFAIR COMPETITION**

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF FLORIDA**

**CASE NO.**

ADVANCED GROUND INFORMATION  
SYSTEMS, INC.,

Plaintiff.

JURY TRIAL DEMANDED

vs

LIFE360, INC.,

Defendant.

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**PLAINTIFF ADVANCED GROUND INFORMATION SYSTEMS, INC.'S  
COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Advanced Ground Information Systems, Inc., through its attorneys, for its complaint against defendant Life360, Inc., alleges as follows:

**STATEMENT OF JURISDICTION**

1. This action arises under the patent laws of the United States, Title 35 of the United States Code, including 35 U.S.C. §§ 271 and 281.

**NATURE OF THE ACTION**

2. This is a patent infringement action to stop Life360, Inc.'s ("Life360") willful infringement of Advanced Ground Information System, Inc.'s ("AGIS") United States Patent No. 7,031,728 entitled "Cellular Phone/PDA Communication System" (hereinafter "the '728 Patent"; a copy of which is attached hereto as Exhibit A), United States Patent No. 7,764,954 entitled "Method of Providing Cell Phones in a Cell Phone Signal Strength Chart of Multiple Cell Phones in a Communication Network" (hereinafter "the '954 Patent"; a copy of which is attached hereto as Exhibit B), United States Patent No. 8,126,441 entitled "Method of

Establishing a Cell Phone Network of Participants with a Common Interest” (hereinafter “the ’441 Patent”; a copy of which is attached hereto as Exhibit C); and United States Patent No. 7,672,681 entitled “Method of Renaming Soft Switch Controls in all Participant’s Cell Phones by an Administrator” (hereinafter “the ’681 Patent”; a copy of which is attached hereto as Exhibit D) (collectively, the “Patents-in-Suit”). AGIS is the owner of the Patents-in-Suit and seeks injunctive relief and monetary damages.

### **THE PARTIES**

3. Plaintiff AGIS is a limited liability company organized and existing under the laws of the State of Florida with a principal place of business at 92 Lighthouse Drive, Jupiter, Florida, 33469.

4. On information and belief, Life360 is a corporation organized and existing under the laws of the State of Delaware with a principal place of business at 539 Bryant Street, Suite 402, San Francisco, California, 94107.

### **JURISDICTION AND VENUE**

5. This Court has Federal subject matter jurisdiction over this matter pursuant to 28 U.S.C. §§ 1331 and 1338(a) because it arises under the patent laws of the United States, Title 35 of the United States Code, as it alleges acts of patent infringement.

6. This Court has personal jurisdiction over Life360. On information and belief, Life360 either directly or indirectly through one or more of its subsidiaries, affiliates, partners, or other related parties, has conducted and/or continues to conduct business within the State of Florida, including the Southern District of Florida. On information and belief, Life360 has and/or does now, directly or through intermediaries (including distributors, retailers, and others) ship, distribute, offer for sale, sell, advertise, operate, use and/or direct the operation and use of

its Life360 smartphone software application in the United States, the State of Florida, and the Southern District of Florida. For example, on information and belief, Life360 has caused the Life360 smartphone software application to be downloaded and used by residents in the Southern District of Florida through smartphone application stores such as the Google Play Store. On information and belief, Life360 operates a website that provides instructions on how to use its Life360 smartphone software application in an infringing manner. On information and belief, this website is accessible to and has been accessed by residents of the Southern District of Florida.

7. AGIS's main place of business is in the state of Florida.

8. On information and belief, venue in this judicial district is proper under 28 U.S.C. §§ 1391 and 1400(b).

**MALCOLM K. "CAP" BEYER JR.'S INVENTIONS AND  
LIFE360'S CONTINUING WILLFUL INFRINGEMENT**

9. AGIS is a Florida-based military contractor, software developer, and technology company. Malcolm K. "Cap" Beyer, Jr., a graduate of the United States Naval Academy and a former Marine, is the company's CEO and the named inventor of the AGIS patent portfolio. Mr. Beyer founded AGIS shortly after the September 11, 2001, terrorist attacks because he realized that many first-responder and civilian lives were lost that day, in part, because of poor communications systems. He envisioned and developed a new system that would use PDAs and cell phones to give users situational awareness superior to that provided by conventional military and first-responder radio systems.

10. AGIS developed prototypes that matured into its LifeRing<sup>TM</sup> system. LifeRing<sup>TM</sup> provides first responders, law enforcement, and military personnel with what is essentially a tactical operations center built into hand-held or notebook-sized form factors. Using GPS-based

location technology and existing or special-purpose cellular communications networks, LifeRing™ users can exchange location, heading, speed, and other information with other members of their group, see each other's locations superimposed onto onscreen maps and satellite images, and rapidly communicate and coordinate their efforts. The system also interfaces with military command-and-control systems, such as GCCS, JCR, AFATDS, C2PC, and FBCB2.

11. On May 13, 2014, AGIS, through its attorneys, sent a letter to Mr. Chris Hulls, the Chief Executive Officer of Life360 Inc. ("Life360"). In that letter, AGIS identified the Patents-in-Suit, and described how Life360's smartphone software application, entitled "Life360" (hereinafter "the Life360 smartphone software application"), is described by claims therein. AGIS invited Life360 to discuss a patent licensing arrangement. Life360 responded to AGIS's invitation as follows:

Dear Piece of Shit,

We are currently in the process of retaining counsel and investigating this matter. As a result, we will not be able to meet your Friday deadline. After reviewing this matter with our counsel, we will provide a prompt response.

I will pray tonight that karma is real, and that you are its worthy recipient,

Chris

Upon information and belief, Life360 has continued to infringe AGIS's patents.

12. Life360 makes, sells, and distributes products, including the Life360 smartphone software application, with which it has infringed and continues to infringe AGIS's patents, directly and indirectly. On information and belief, Life360 has been distributing and/or selling location based smartphone software since 2008, and its software is being used by tens of millions

of users. Life360's software products depend entirely on location-based reporting and communication technology invented and patented by Mr. Beyer and AGIS.

13. AGIS has marked all of its products embodying the inventions claimed in its patents as prescribed by 35 U.S.C. §287. Life360 was given actual notice of the infringements alleged in this complaint no later than May 13, 2014, or in the alternative, no later than the date of service of this complaint upon Life360.

**COUNT ONE – INFRINGEMENT OF U.S. PATENT 7,031,728**

14. AGIS incorporates by reference Paragraphs 1 through 13 in their entirety as if fully set forth herein.

15. On April 18, 2006, United States Patent No. 7,031,728 ("the '728 Patent") was issued to Mr. Beyer for an invention in a cellular phone/PDA communication system. Mr. Beyer assigned the '728 Patent to AGIS, and AGIS has retained the right to sue for past and future infringement.

16. Life360 has directly infringed and continues to directly infringe the '728 Patent by making, selling, offering for sale, and using communication systems that embody the patented invention, and has contributed to and induced the use of (and continues to contribute to and induce the use of) such infringing communication systems by others, and will continue to do so unless enjoined by this Court.

17. Life360 has, and continues to, directly infringe the '728 patent. On information and belief, Life360's employees have used the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claims 3, 4, 7, 8, 10, and 11 of the '728 Patent. For example, Life360's smartphone software application includes a "Family Locator" feature along



with map software, messaging software, and call software that allows a user to touch a family member's symbol on a map and initiate a rapid voice communication or text message.

18. Life360 has, and continues to, induce infringement of the '728 patent. Life360 has distributed, and continues to distribute, the Life360 smartphone software application to users via, for instance, the Google Play Store. The Google Play Store indicates that Life360 has been downloaded between five and ten million times. On information and belief, Life360's users have used, and continue to use, the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claims 3, 4, 7, 8, 10, and 11 of the '728 Patent. For example, Life360's smartphone software application includes a "Family Locator" feature along with map software, messaging software, and call software that allows a user to touch a family member's symbol on a map and initiate a rapid voice communication or text message. Life360 knew or was willfully blind to the fact that its distribution of the Life360 smartphone software application, and instructions relating to the operation thereof, induced and continues to induce infringement by users of at least claims 3, 4, 7, 8, 10, and 11 of the '728 Patent. In AGIS's May 13, 2014 letter, Life360 was informed of these infringing activities, including, *inter alia*, distributing its Life360 smartphone software application and instructions relating to the operation of the same. AGIS's letter provided specific examples of the manner in which Life360's instructions were inducing users to infringe the '728 patent. On information and belief, Life360 continues to distribute the Life360 smartphone software application to users, together with instructions to perform steps that infringe one or more claims of the '728 patent. For example, Life360 describes its software in the Google Play Store as a "Family Locator" that locates family and friends on a private map and allows users to "chat one-on-one or with everyone within each of [their] Circles." As a

further example, Life360 provides instructions on its website for utilizing its Life360 software—and, in particular, the “Family Locator” feature—on smartphones and tablets. Life360, therefore, has and continues to induce infringement by its users.

19. Life360 has, and continues to, contribute to infringement of the '728 patent by its users. For example, through, for instance, the Google Play Store, Life360 has distributed the Life360 smartphone software application to users knowing the same to be especially made or especially adapted for infringement of the '728 patent. The Google Play Store indicates that Life360 has been downloaded between five and ten million times. On information and belief, Life360's users have used the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claims 3, 4, 7, 8, 10, and 11 of the '728 Patent. For example, Life360's smartphone software application includes a “Family Locator” along with map software, messaging software, and call software that allows a user to touch a family member's symbol on a map and initiate a rapid voice communication or text message. Life360 knew that its distribution of the Life360 smartphone software application contributed to infringement by its users of at least claims 3, 4, 7, 8, 10, and 11 of the '728 Patent no later than May 13, 2014, the date on which AGIS sent a letter to Life360 identifying its infringement of the '728 patent. Even though Life360 knew of these facts, Life360 has continued to distribute the Life360 smartphone software application, which is especially made for users to infringe one or more claims of the '728 Patent. For example, Life360 describes its software in the Google Play Store as a “Family Locator” that locates family and friends on a private map and allows users to “chat one-on-one or with everyone within each of [their] Circles.” As a further example, Life360 provides instructions on its website for utilizing its Life360 software—and, in particular, the “Family

Locator” feature—on smartphones and tablets. The Life360 smartphone software application is not a staple article or a commodity of commerce suitable for a substantial non-infringing use. Life360, therefore, has contributed to, and is currently contributing to, the infringement of others.

20. Life360 has infringed and continues to infringe despite an objectively high likelihood that its actions constitute infringement of AGIS’s valid patent rights. On information and belief, Life360 knew of or should have known of this objectively high risk at least as early as the launch of each infringing product, but no later than May 13, 2014, the date on which AGIS sent a letter to Life360 identifying the ’728 patent or—in the alternative—no later than the date of service of this complaint. Thus, Life360’s infringement of the ’728 patent has been and continues to be willful.

21. AGIS has suffered irreparable harm from, and has no adequate remedy at law against, Life360’s acts of infringement. Unless Life360 is enjoined from its infringement of the ’728 patent, AGIS will suffer further irreparable harm.

22. As a result of Life360’s acts of infringement, AGIS has suffered and will continue to suffer damages in an amount to be proven at trial, and pursuant to 35 U.S.C. § 284, requests the award of such damages, not less than a reasonable royalty. Because of Life360’s willful infringement, AGIS requests the award of treble damages and attorneys’ fees, pursuant to, for example, 35 U.S.C. §§ 284 and 285.

## **COUNT TWO – INFRINGEMENT OF U.S. PATENT 7,764,954**

23. AGIS incorporates by reference Paragraphs 1 through 13 in their entirety as if fully set forth herein.

24. On July 27, 2010, United States Patent No. 7,764,954 (“the ’954 Patent”) was issued to Mr. Beyer for an invention in a cellular phone/PDA communication system. Mr. Beyer

assigned the '954 Patent to AGIS, and AGIS has retained the right to sue for past and future infringement.

25. Life360 has directly infringed and continues to directly infringe the '954 Patent by making, selling, offering for sale, and using communication systems and software that provide cellular communications networks that embody the patented invention, and has contributed to and induced the use of (and continues to contribute to and induce the use of) such infringing communication systems and software by others, and will continue to do so unless enjoined by this Court.

26. Life360 has, and continues to, directly infringe the '954 patent. On information and belief, Life360's employees have used the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claim 1 of the '954 Patent. For example, Life360's smartphone software application includes a "Family Locator" that allows users to view the locations of other Life360 users within a "circle" and to initiate communication with those users by touching symbols on maps. Upon information and belief, these maps are stored on remote servers and are downloaded from those servers to the smartphones and tablets running the Life360 smartphone software application.

27. Life360 has, and continues to, induce infringement of the '954 patent. Life360 has distributed, and continues to distribute, the Life360 smartphone software application to users via, for instance, the Google Play Store. The Google Play Store indicates that Life360 has been downloaded between five and ten million times. On information and belief, Life360's users have used, and continue to use, the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the

limitations of at least claim 1 of the '954 Patent. For example, Life360's smartphone software application includes a "Family Locator" that allows users to view the locations of other Life360 users within a "circle" and to initiate communication with those users by touching symbols on maps. Upon information and belief, these maps are stored on remote servers and are downloaded from those servers to the smartphones and tablets running the Life360 smartphone software application. Life360 knew or was willfully blind to the fact that its distribution of the Life360 smartphone software application, and instructions relating to the operation thereof, induced and continues to induce infringement by users of at least claim 1 of the '954 Patent. In AGIS's May 13, 2014 letter, Life360 was informed of these infringing activities, including, *inter alia*, distributing its Life360 smartphone software application and instructions relating to the operation of the same. AGIS's letter provided specific examples of the manner in which Life360's instructions were inducing users to infringe the '954 patent. On information and belief, Life360 continues to distribute the Life360 smartphone software application to users, together with instructions to utilize the "Family Locator" feature and to perform steps that infringe one or more claims of the '954 patent. For example, Life360 describes its software in the Google Play Store as a "Family Locator" that locates family and friends on a private map and allows users to "chat one-on-one or with everyone within each of [their] Circles." As a further example, Life360 provides instructions on its website for utilizing its Life360 software—and, in particular, the "Family Locator" feature—on smartphones and tablets. Life360, therefore, has and continues to induce infringement by its users.

28. Life360 has, and continues to, contribute to infringement of the '954 patent by its users. For example, through, for instance, the Google Play Store, Life360 has distributed the Life360 smartphone software application to users knowing the same to be especially made or

especially adapted for infringement of the '954 patent. The Google Play Store indicates that Life360 has been downloaded between five and ten million times. On information and belief, Life360's users have used the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claim 1 of the '954 Patent. For example, Life360's smartphone software application includes a "Family Locator" that allows users to view the locations of other Life360 users within a "circle" and to initiate communication with those users by touching symbols on maps. Upon information and belief, these maps are stored on remote servers and are downloaded from those servers to the smartphones and tablets running the Life360 smartphone software application. Life360 knew that its distribution of the Life360 smartphone software application contributed to infringement by its users of at least claim 1 of the '954 Patent no later than May 13, 2014, the date on which AGIS sent a letter to Life360 identifying its infringement of the '954 patent. Even though Life360 knew of these facts, Life360 has continued to distribute the Life360 smartphone software application, which is especially made for users to infringe one or more claims of the '954 Patent. For example, Life360 describes its software in the Google Play Store as a "Family Locator" that locates family and friends on a private map and allows users to "chat one-on-one or with everyone within each of [their] Circles." As a further example, Life360 provides instructions on its website for utilizing its Life360 software—and, in particular, the "Family Locator" feature—on smartphones and tablets. The Life360 smartphone software application is not a staple article or a commodity of commerce suitable for a substantial non-infringing use. Life360, therefore, has contributed to, and is currently contributing to, the infringement of others.

29. Life360 has infringed and continues to infringe despite an objectively high likelihood that its actions constitute infringement of AGIS's valid patent rights. On information and belief, Life360 knew of or should have known of this objectively high risk at least as early as the launch of each infringing product, but no later than May 13, 2014, the date on which AGIS sent a letter to Life360 identifying the '954 patent or—in the alternative—no later than the date of service of this complaint. Thus, Life360's infringement of the '954 patent has been and continues to be willful.

30. AGIS has suffered irreparable harm from, and has no adequate remedy at law against, Life360's acts of infringement. Unless Life360 is enjoined from its infringement of the '954 patent, AGIS will suffer further irreparable harm.

31. As a result of Life360's acts of infringement, AGIS has suffered and will continue to suffer damages in an amount to be proven at trial, and pursuant to 35 U.S.C. § 284, requests the award of such damages, not less than a reasonable royalty. Because of Life360's willful infringement, AGIS requests the award of treble damages and attorneys' fees, pursuant to, for example, 35 U.S.C. §§ 284 and 285.

### **COUNT THREE – INFRINGEMENT OF U.S. PATENT 8,126,441**

32. AGIS incorporates by reference Paragraphs 1 through 13 in their entirety as if fully set forth herein.

33. On February 28, 2012, United States Patent No. 8,126,441 ("the '441 Patent") was issued to Mr. Beyer for an invention on a method of establishing a cell phone network of participants with a common interest. Mr. Beyer assigned the '441 Patent to AGIS, and AGIS has retained the right to sue for past and future infringement.

34. Life360 has directly infringed and continues to directly infringe the '441 Patent by making, selling, offering for sale, and using communication systems and software that provide cellular communications networks that embody the patented invention, and has contributed to and induced the use of (and continues to contribute to and induce the use of) such infringing communication systems and software by others, and will continue to do so unless enjoined by this Court.

35. Life360 has, and continues to, directly infringe the '441 patent. On information and belief, Life360's employees have used the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claim 1 of the '441 Patent. For example, the Life360 smartphone software application includes a "Family Locator" feature that allows users to view the locations of other Life360 users and to initiate communication with those users by touching symbols on a map. The "Family Locator" includes an additional feature that prompts users to poll other Life360 users to prompt them to begin transmitting location information.

36. Life360 has, and continues to, induce infringement of the '441 patent. Life360 has distributed, and continues to distribute, the Life360 smartphone software application to users via, for instance, the Google Play Store. The Google Play Store indicates that Life360 has been downloaded between five and ten million times. On information and belief, Life360's users have used the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claim 1 of the '441 patent. For example, the Life360 smartphone software application includes a "Family Locator" feature that allows users to view the locations of other Life360 users and to initiate communication with those users by touching symbols on a map. The "Family Locator"



includes an additional feature that prompts users to poll other Life360 users to prompt them to begin transmitting location information. Life360 knew or was willfully blind to the fact that its distribution of the Life360 smartphone software application, and instructions relating to the operation thereof, induced and continues to induce infringement by its users of at least claim 1 of the '441 Patent. In AGIS's May 13, 2014 letter, Life360 was informed of these infringing activities, including, *inter alia*, distributing its Life360 smartphone software application and instructions relating to the operation of the same. AGIS's letter provided specific examples of the manner in which Life360's instructions were inducing users to infringe the '441 patent. On information and belief, Life360 continues to distribute the Life360 smartphone software application to users, together with instructions to utilize the "Family Locator" feature and to perform steps that infringe one or more claims of the '441 patent. For example, Life360 describes its software in the Google Play Store as a "Family Locator" that locates family and friends on a private map and allows users to "chat one-on-one or with everyone within each of [their] Circles." As a further example, Life360 provides instructions on its website for utilizing its Life360 software—and, in particular, the "Family Locator" feature—on smartphones and tablets. Life360, therefore, has and continues to induce infringement by its users.

37. Life360 has, and continues to, contribute to infringement of the '441 patent by its users. For example, though, for instance, the Google Play Store, Life360 has distributed the Life360 smartphone software application to users knowing the same to be especially made or especially adapted for infringement of the '441 patent. The Google Play Store indicates that Life360 has been downloaded between five and ten million times. On information and belief, Life360's users have used the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of

the limitations of at least claim 1 of the '441 Patent. For example, the Life360 smartphone software application includes a "Family Locator" feature that allows users to view the locations of other Life360 users and to initiate communication with those users by touching symbols on a map. The "Family Locator" includes an additional feature that prompts users to poll other Life360 users to prompt them to begin transmitting location information. Life360 knew that its distribution of the Life360 smartphone software application contributed to infringement by its users of at least claim 1 of the '441 Patent no later than May 13, 2014, the date on which AGIS sent a letter to Life360 identifying its infringement of the '441 patent. Even though Life360 knew of or should have known these facts, Life360 has continued to distribute the Life360 smartphone software application, which is especially made for users to infringe one or more claims of the '441 Patent. For example, Life360 describes its software in the Google Play Store as a "Family Locator" that locates family and friends on a private map and allows users to "chat one-on-one or with everyone within each of [their] Circles." As a further example, Life360 provides instructions on its website for utilizing its Life360 software—and, in particular, the "Family Locator" feature—on smartphones and tablets. The Life360 smartphone software application is not a staple article or a commodity of commerce suitable for a substantial non-infringing use. Life360, therefore, has contributed to, and is currently contributing to, the infringement of others.

38. Life360 has infringed and continues to infringe despite an objectively high likelihood that its actions constitute infringement of AGIS's valid patent rights. On information and belief, Life360 knew of or should have known of this objectively high risk at least as early as the launch of each infringing product, but no later than May 13, 2014, the date on which AGIS sent a letter to Life360 identifying the '441 patent or—in the alternative—no later than the date

of service of this complaint. Thus, Life360's infringement of the '441 patent has been and continues to be willful.

39. AGIS has suffered irreparable harm from, and has no adequate remedy at law against, Life360's acts of infringement. Unless Life360 is enjoined from its infringement of the '441 patent, AGIS will suffer further irreparable harm.

40. As a result of Life360's acts of infringement, AGIS has suffered and will continue to suffer damages in an amount to be proven at trial, and pursuant to 35 U.S.C. § 284, requests the award of such damages, not less than a reasonable royalty. Because of Life360's willful infringement, AGIS requests the award of treble damages and attorneys' fees, pursuant to, for example, 35 U.S.C. §§ 284 and 285.

#### **COUNT FOUR – INFRINGEMENT OF U.S. PATENT 7,672,681**

41. AGIS incorporates by reference Paragraphs 1 through 13 in their entirety as if fully set forth herein.

42. On March 2, 2010, United States Patent No. 7,672,681 ("the '681 Patent") was issued to Mr. Beyer for an invention in a cellular phone/PDA communication system. Mr. Beyer assigned the '681 Patent to AGIS, and AGIS has retained the right to sue for past and future infringement.

43. Life360 has directly infringed and continues to directly infringe the '681 Patent by making, selling, offering for sale, and using communication systems that embody the patented invention, and has contributed to and induced the use of (and continues to contribute to and induce the use of) such infringing communication systems by others, and will continue to do so unless enjoined by this Court.

44. Life360 has, and continues to, directly infringe the '681 patent. On information and belief, Life360's employees have used the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claims 1, 5, and 9 of the '681 Patent. For example, the Life360 smartphone software application includes a "Family Locator" feature that allows users to view the locations of other Life360 users and to initiate communication with those users by touching symbols on a map. The Life360 smartphone software application also includes functionality for performing administrative tasks related to a user's Life360 account such as changing a user's name or profile picture.

45. Life360 has, and continues to, induce infringement of the '681 patent. Life360 has distributed, and continues to distribute, the Life360 smartphone software application to users via, for instance, the Google Play Store. The Google Play Store indicates that Life360 has been downloaded between five and ten million times. On information and belief, Life360's users have used, and continue to use, the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claims 1, 5, and 9 of the '681 patent. For example, the Life360 smartphone software application includes a "Family Locator" feature that allows users to view the locations of other Life360 users and to initiate communication with those users by touching symbols on a map. The Life360 smartphone software application also includes functionality for performing administrative tasks related to a user's Life360 account such as changing a user's name or profile picture. Life360 knew or was willfully blind to the fact that its distribution of the Life360 smartphone software application, and instructions relating to the operation thereof, induced and continues to induce infringement by its users of at least claims 1, 5, and 9 of the '681 Patent. In

AGIS's May 13, 2014 letter, Life360 was informed of these infringing activities, including, *inter alia*, distributing its Life360 smartphone software application and instructions relating to the operation of the same. AGIS' letter provided specific examples of the manner in which Life360's instructions were inducing users to infringe the '681 patent. On information and belief, Life360 continues to distribute the Life360 smartphone software application to users, together with instructions to utilize the "Family Locator" feature and to perform steps that infringe one or more claims of the '681 patent. For example, Life360 describes its software in the Google Play Store as a "Family Locator" that locates family and friends on a private map and allows users to "chat one-on-one or with everyone within each of [their] Circles." As a further example, Life360 provides instructions on its website for utilizing its Life360 software—and, in particular, the "Family Locator" feature—on smartphones and tablets, including instructions to change a user's information (such as "profile pictures"). Life360, therefore, has and continues to induce infringement by its users.

46. Life360 has, and continues to, contribute to infringement of the '681 patent by its users. For example, through, for instance, the Google Play Store, Life360 has distributed the Life360 smartphone software application to users knowing the same to be especially made or especially adapted for infringement of the '681 patent. The Google Play Store indicates that Life360 has been downloaded between five and ten million times. On information and belief, Life360's users have used the Life360 smartphone software application in the United States. The Life360 smartphone software application, when used on a smartphone or tablet, meets all of the limitations of at least claims 1, 5, and 9 of the '681 Patent. For example, the Life360 smartphone software application includes a "Family Locator" feature that allows users to view the locations of other Life360 users and to initiate communication with those users by touching

symbols on a map. The Life360 smartphone software application also includes functionality for performing administrative tasks related to a user's Life360 account such as changing a user's name or profile picture. Life360 knew that its distribution of the Life360 smartphone software application contributed to infringement by its users of at least claims 1, 5, and 9 of the '681 Patent no later than May 13, 2014, the date on which AGIS sent a letter to Life360 identifying its infringement of the '681 patent. Even though Life360 knew of these facts, Life360 has continued to distribute the Life360 smartphone software application, which is especially made for users to infringe one or more claims of the '681 Patent. For example, Life360 describes its software in the Google Play Store as a "Family Locator" that locates family and friends on a private map and allows users to "chat one-on-one or with everyone within each of [their] Circles." As a further example, Life360 provides instructions on its website for utilizing its Life360 software—and, in particular, the "Family Locator" feature—on smartphones and tablets, including instructions to change a user's information (such as "profile pictures"). The Life360 smartphone software application is not a staple article or a commodity of commerce suitable for a substantial non-infringing use. Life360, therefore, has contributed to, and is currently contributing to, the infringement of others.

47. Life360 has infringed and continues to infringe despite an objectively high likelihood that its actions constitute infringement of AGIS's valid patent rights. On information and belief, Life360 knew of or should have known of this objectively high risk at least as early as the launch of each infringing product, but no later than May 13, 2014, the date on which AGIS sent a letter to Life360 identifying the '681 patent or—in the alternative—no later than the date of service of this complaint. Thus, Life360's infringement of the '681 patent has been and continues to be willful.

48. AGIS has suffered irreparable harm from, and has no adequate remedy at law against, Life360's acts of infringement. Unless Life360 is enjoined from its infringement of the '681 patent, AGIS will suffer further irreparable harm.

49. As a result of Life360's acts of infringement, AGIS has suffered and will continue to suffer damages in an amount to be proven at trial, and pursuant to 35 U.S.C. § 284, requests the award of such damages, not less than a reasonable royalty. Because of Life360's willful infringement, AGIS requests the award of treble damages and attorneys' fees, pursuant to, for example, 35 U.S.C. §§ 284 and 285

#### **PRAYER FOR RELIEF**

WHEREFORE, for all of the foregoing reasons, Plaintiff requests this Court grant relief in the following manner:

A. A judgment in favor of Plaintiff that Defendant has infringed and does infringe, directly and indirectly by way of inducement and contributory infringement, the '728, '954, '441, and '681 Patents;

B. A permanent injunction, enjoining Defendant and its officers, directors, agents, servants, employees, affiliates, divisions, branches, subsidiaries, parents, and all others acting in concert or privity with any of them from infringing, or inducing or contributing to the infringement of, the '728, '954, '441, and '681 Patents;

C. An award to Plaintiff of the damages to which it is entitled under at least 35 U.S.C. § 284 for Defendant's past infringement and any continuing or future infringement, including both compensatory damages and treble damages for defendants' willful infringement;

D. A judgment and order requiring defendants to pay the costs of this action (including all disbursements), as well as attorneys' fees;

- E. An award to Plaintiff of pre-judgment and post-judgment interest on its damages;  
and  
F. Such other further relief in law or equity to which Plaintiff may be justly entitled.

**DEMAND FOR JURY TRIAL**

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiff hereby demands a trial by jury as to all issues so triable.

Date: May 16, 2014

Respectfully submitted,

**LOTT & FISCHER, PL**

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# **EXHIBIT 3**

**TO  
COMPLAINT FOR FALSE  
MARKING, TORTIOUS  
INTERFERENCE WITH  
CONTRACT, INTENTIONAL  
INTERFERENCE WITH  
ECONOMIC ADVANTAGE, AND  
UNFAIR COMPETITION**



US007672681B1

(12) **United States Patent**  
**Beyer, Jr.**

(10) **Patent No.:** **US 7,672,681 B1**

(45) **Date of Patent:** **Mar. 2, 2010**

(54) **METHOD OF RENAMING SOFT SWITCH CONTROLS IN ALL PARTICIPANT'S CELL PHONES BY AN ADMINISTRATOR**

(76) Inventor: **Malcolm K. Beyer, Jr.**, 92 Lighthouse Dr., Jupiter Inlet Colony, FL (US) 33469-3504

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 405 days.

(21) Appl. No.: **11/623,450**

(22) Filed: **Jan. 16, 2007**

#### Related U.S. Application Data

(63) Continuation-in-part of application No. 11/308,648, filed on Apr. 17, 2006, which is a continuation-in-part of application No. 10/711,490, filed on Sep. 21, 2004, now Pat. No. 7,031,728.

(51) **Int. Cl.**  
**H04W 24/00** (2009.01)

(52) **U.S. Cl.** ..... **455/457; 455/456.1; 455/566; 455/550.1; 701/207**

(58) **Field of Classification Search** ..... **455/422.1, 455/458, 460, 456.1-457, 550.1, 566; 370/310, 370/312; 701/200, 207, 208, 209, 210, 211-214**  
See application file for complete search history.

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*Primary Examiner*—Kamran Afshar

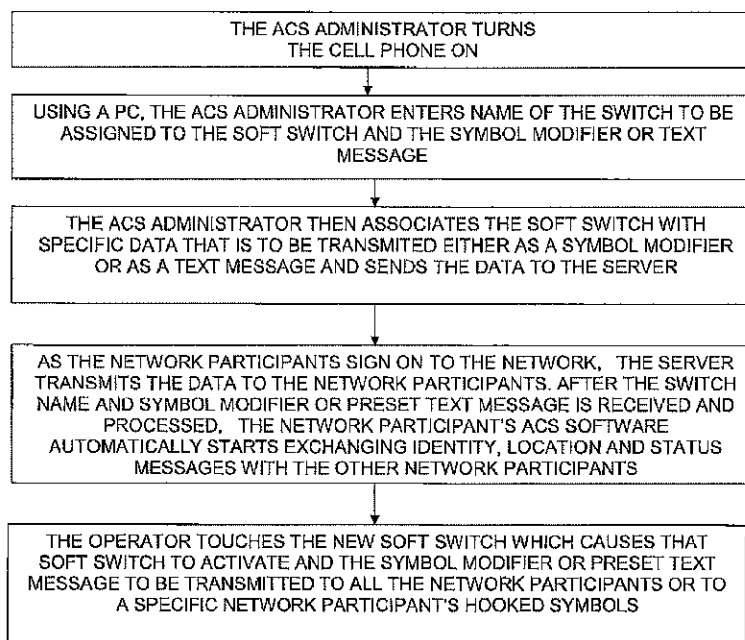
*Assistant Examiner*—Neda Behrooz

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#### (57) **ABSTRACT**

A method, a combined cellular phone, PDA, GPS communication device and system having specialized software applications for allowing a plurality of combined cellular phone/PDA device users to monitor each other's locations and status, to initiate cellular phone calls by touching a symbol on the touch screen display with a stylus which can also include point to call conferencing calling. Each participant's cellular phone/PDA device includes a GPS navigation receiver with application software for point to call cellular phone initiation to participants and geographical entities including vehicles, persons or events, conference calls and video transfers. An administrator can: (a) create and remotely install new symbology and modify the symbols and nomenclature used in each participant's cell phone screen display for a specific environment such as police and military; (b) create and remotely install screen drawn soft switches used in each participant's cell phone, the activation of which accesses application software; and (c) create and remotely install screen drawn soft switches used in each participant's cell phone, the activation of which accesses a URL address.

**12 Claims, 5 Drawing Sheets**

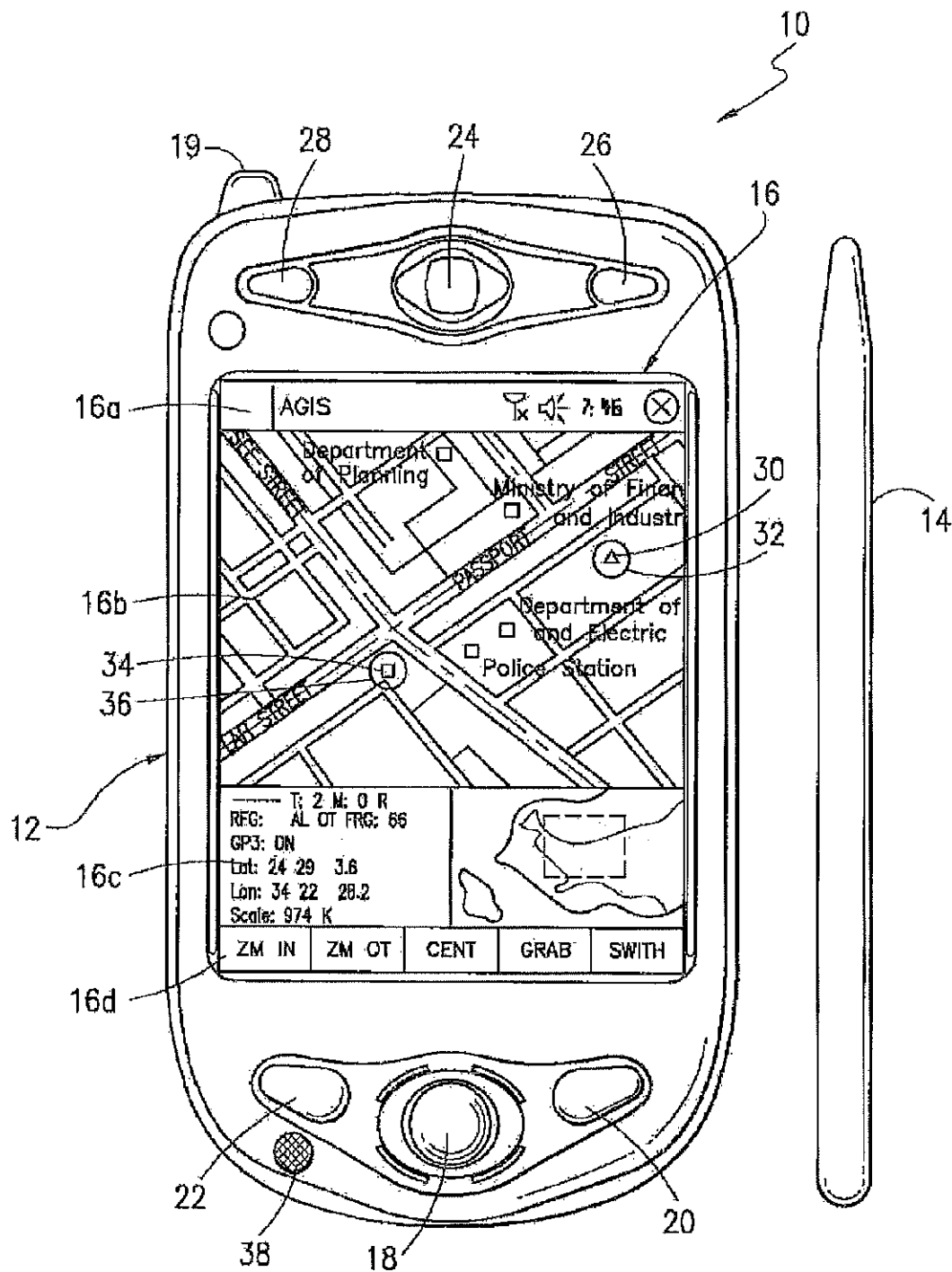


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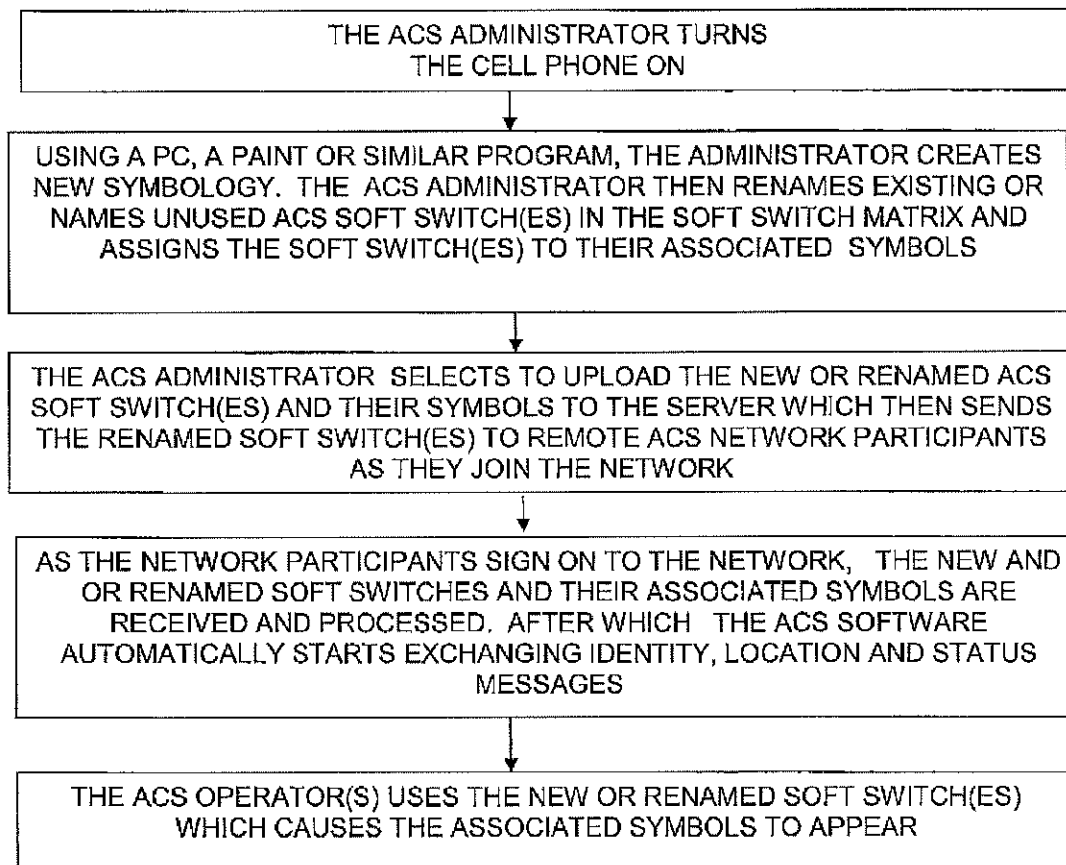
FIG. 1

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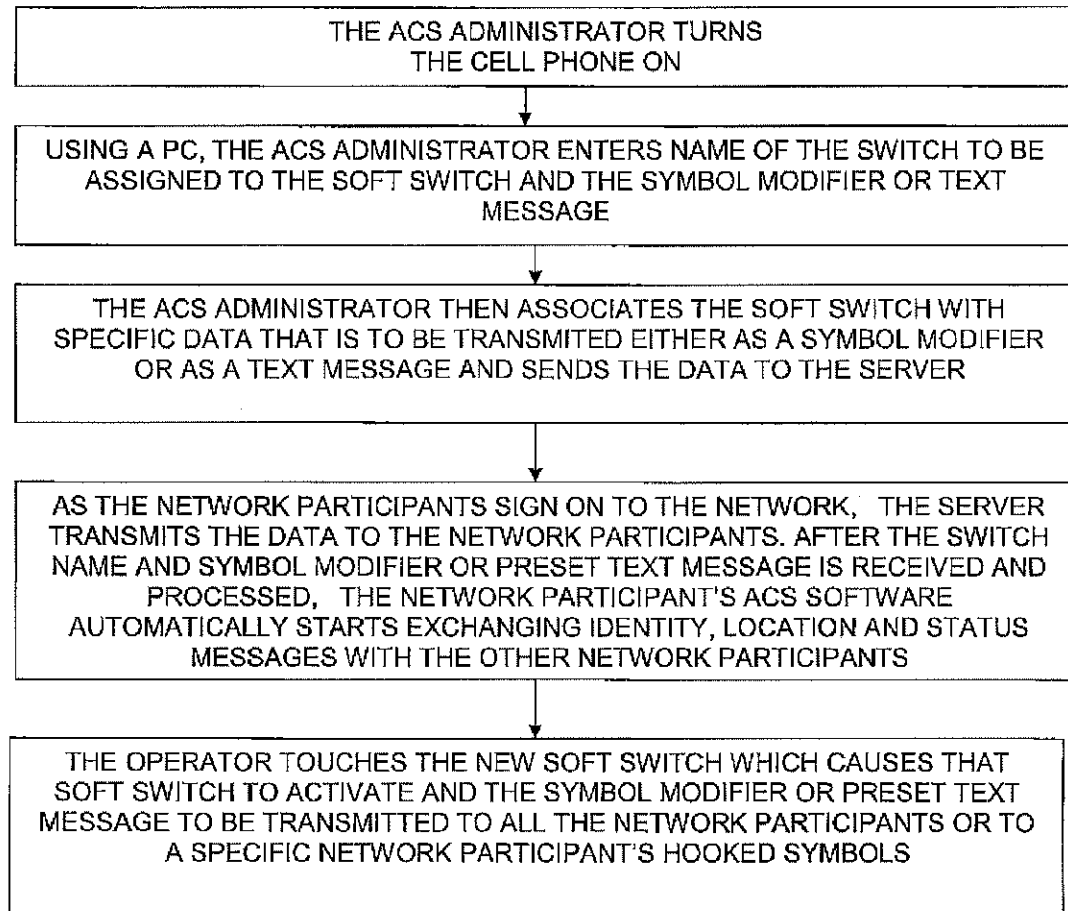
**Fig 2a**

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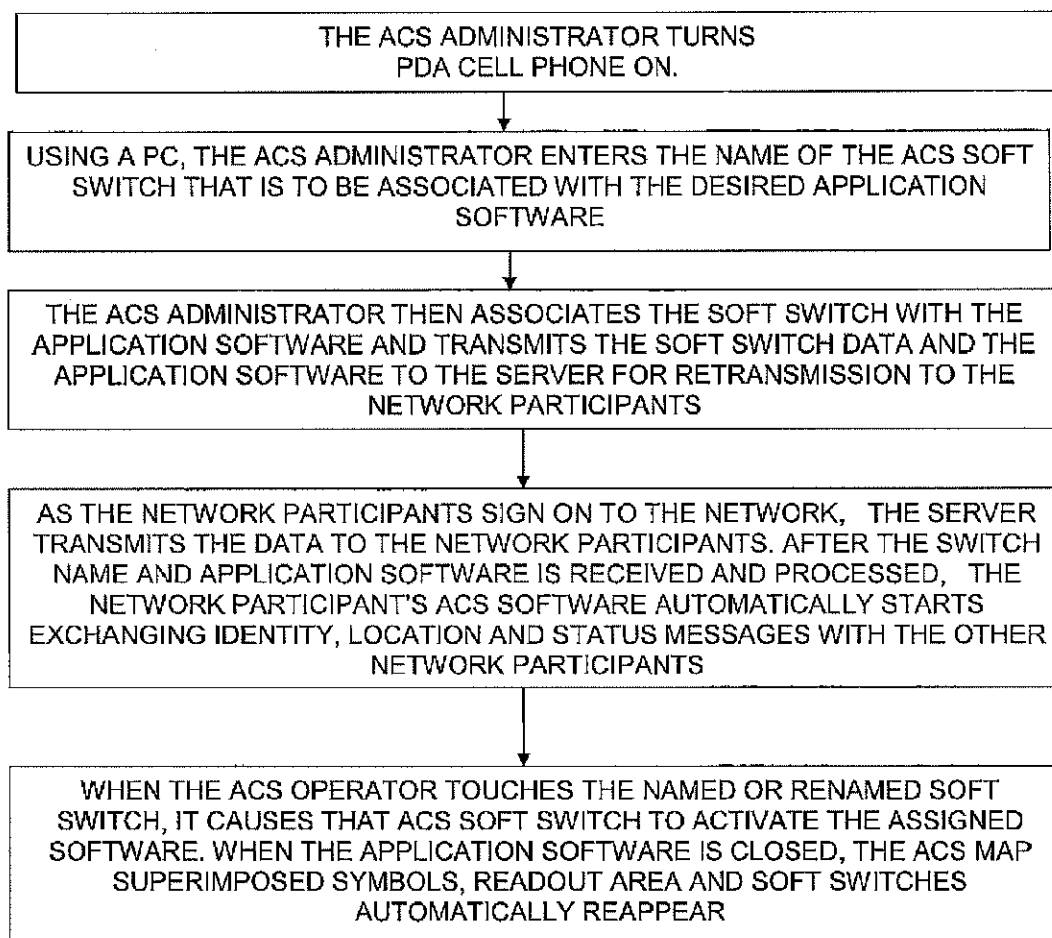
**Fig 2b**

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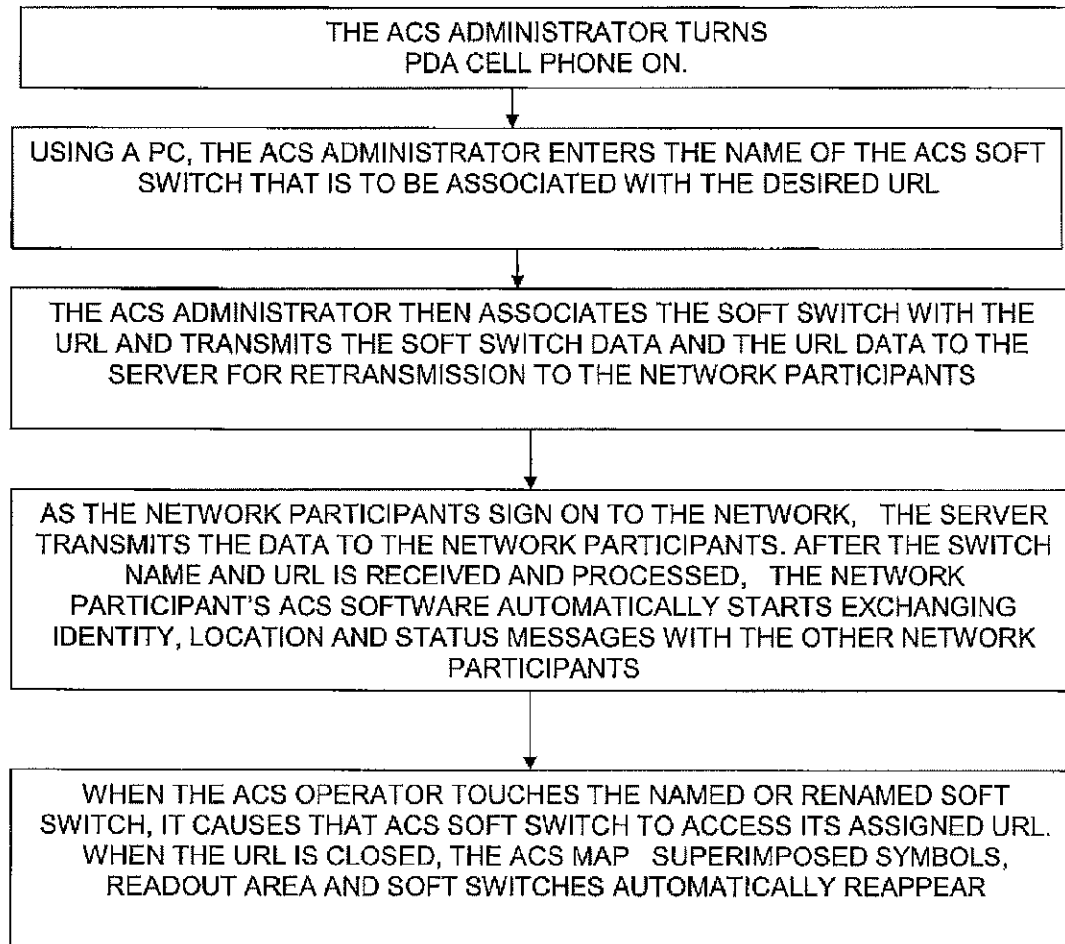
**Fig 2c**

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**Fig 2d**



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## METHOD OF RENAMING SOFT SWITCH CONTROLS IN ALL PARTICIPANT'S CELL PHONES BY AN ADMINISTRATOR

This application is a continuation-in-part of U.S. patent application Ser. No. 11/308,648 filed Apr. 17, 2006 which is a continuation-in-part of U.S. patent application Ser. No. 10/711,490 now U.S. Pat. No. 7,031,728.

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

A communications system using a plurality of cellular phone devices each having an integrated PDA and CPU and a GPS receiver for the management of two or more people through the use of a communications network. The method and system provide each user with an integrated handheld cellular/PDA/GPS (cell phone device) includes a touch screen display and advanced communication software application programs (hereinafter referred to as ACS) and databases used in conjunction with a remote server that enable an administrator or user to modify all network participants' cell phone devices' display soft switches and symbology.

#### 2. Description of Related Art

The purpose of a communications system is to transmit information bearing analog and digital messages from a source, located at one point, to a user destination, located at another point some distance away. A communications system is generally comprised of three basic elements: transmitter, information channel and receiver. One form of communication in recent years is cellular phone telephony. A network of cellular communication systems set up around an area such as the United States allows multiple users to talk to each other, either on individual calls or on group calls. Some cellular phone services enable a cellular phone to engage in conference calls with a small number of users. Furthermore, cellular conference calls can be established through 800 number services. Cellular telephony also now includes systems that include Global Positioning System (GPS) navigation that utilizes satellite navigation. These devices thus unite cellular phone technology with navigation information, computer information transmission and receipt of data.

The method and operation of communication devices used herein are described in U.S. Pat. No. 7,031,728 which is hereby incorporated by reference and pending U.S. patent application Ser. No. 11/308,648.

Each cell phone device includes a touch screen display that includes virtual control switches for the operation of the network communication and the ACS software programs. The virtually displayed switches on the touch screen are called soft switches. Each soft switch or matrix of soft switches are labeled or use abbreviations to convey information as to function.

The display screen on each cell phone device is typically a geographical display such as a chart or map of the network operating area that contains the active participants. The touch screen display can generate symbols that indicate participants, objects or events of current actions or activities. Thus, a screen could symbolically show a fireman, a fire truck and the location of a fire in real time. The symbols are the same on all user's cell phone devices. Each user can transmit or receive data correlated to specific symbols and utilizing specific soft switches that can be labeled for specific functions such as alerting other users to call all firemen in an area to a current fire. Thus, each cell phone device can be custom programmed for specific operational environments through

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its virtual soft switches and symbols generated and displayed for certain people, objects and events.

Using the invention described herein, a designated administrator using a personal computer (PC) or other input device can reprogram all user and network participants' cell phone devices to change, modify or create new virtual switch names and new symbols for a different operating environment.

An advantageous provision would be to provide a cell phone software program that provides the system administrator the ability to generate display symbology and add or redefine the local and remote cell phone devices' soft switches that specify the symbols for all network participants for a specific environment such as a military, police, fire and other emergency environments.

### SUMMARY OF THE INVENTION

Applicant's communication system and method described herein is embodied in the advanced communication software (ACS) application programs developed by applicant and installed in the integrated PDA/GPS cell phones used herein.

A plurality of cellular phone/PDA/GPS devices each having a CPU and ACS application programs and databases provides a communication network in conjunction with a remote server with: (a) the ability to establish a digital network of participants each having PDA/GPS phone devices, to exchange identity, position and status information that is displayed as symbols superimposed on a map on each of the participant's PDA/GPS devices (the digital information exchanged in the identity, position and status messages causes the appropriate pre-stored symbol that represents each network participant to be displayed at the correct latitude and longitude); (b) the ability to display additional information by touching the PDA touch screen display at the correct map location, thus indicating its latitude and longitude, and selecting a soft switch to indicate the type of entity (i.e. fire, restaurant, and similar entities); (c) the ability to make calls to or send data to remote cell phone devices by touching their display symbols and selecting appropriate soft switches; (d) the ability to layer a sufficient number of soft or virtual switches or virtual buttons displayed on the PDA touch screen display to perform the above functions without overlaying the display map; and (e) the ability to change the symbols and nomenclature of a series of soft switches in each cell phone device in a network of participants for different operating environments.

A communication network server acts as a forwarder for IP communications between any combination of cell phone/PDA device users and/or PC based users. Network participant location, identity and status messages are sent to the server by each user. Network participant entered tracks are also sent to the server. Tracks are symbolic paths and representations of the location and activity of other network participants displayed on all network participants' screens. Because this data is of interest to all the network participants, the server forwards the data received from one participant to all other participants, thus providing the information necessary for all network participants to know the identity, location and status of all other network participants on each display touch screen.

The server also acts as a forwarder of data addressed from one participant to one or more addressed participants, thus permitting the transmission of free text, preformatted messages, photographs, video, E-mail and URL data from one network participant to other selected network participants.

The above functions can also be accomplished using peer to peer WiFi, WiMax or other peer to peer communications. However, for use with cellular communications and to assure

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the level of security that cell phone companies require, a centralized static IP routable server is used.

The IP server also fills another role of being a database from which data can be requested by network participants (i.e. maps, satellite images, or other visual information) or can be pushed to network participants (i.e. symbology and soft switch changes, and the like).

It is an object of this invention to enable each participant in the communications net to cause their or other net participants to report their locations, identity and status on the communication net.

Another object of this invention is to enable each participant in the communications net to be able to easily transmit an entity of interest to the other participants of the net by touching the display screen at the entity's location on the map, thus selecting the soft switch representative of the entity's identity causing the symbol's location and identity to be transmitted on the network.

Another object of the invention is to provide a communication system having a plurality of individual cell phones that allow an operator of one cell phone to remotely control any of the other cell phone/PDA system phones including the ability to have an administrator or user: create new screen symbols and soft (virtual) switches in each user's cell phone device for a specific environment; create new symbol modifiers or text messages and associate them with a soft switch; to associate application software to soft switches; to associate URLs with soft switches and to cause the data to be transmitted to a server for retransmission to other network participants.

In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with particular reference to the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a front elevation view of a cellular phone/PDA/GPS having a touch screen.

FIG. 2a shows a flow chart of a method for an administrator (or a knowledgeable user) to create a symbol using paint (or similar software) and then to rename or name a used soft switch and then to associate and transmit the symbols and soft switch names to the network server. The new symbols and new switches are then downloaded from the server to the network participants as the participants sign on to the network so that the newly named soft switch(es) with their associated symbols appear on all the network participants' cell phone devices.

FIG. 2b shows a flow chart of a method for an administrator (or a knowledgeable user) using paint (or similar software) to create symbol modifier(s) or preset text message(s) and then to name or rename a used soft switch and then to associate the symbol modifiers/preset text messages and named and renamed soft switches and to transmit the associated data to the network server. The server downloads the data to the network participants as participants sign on to the network so that the soft switch(es) with their associated symbol modifier(s) appear on all the network participants' cell phone devices.

FIG. 2c shows a flow chart of a method for an administrator (or a knowledgeable user) to assign the application software to a soft switch and then to transmit the soft switch and the assigned application software to the network server which are then downloaded to the network participants as participants sign on to the network so that the soft switch(es) and the application software are contained on all the network participants' cell phone devices and, when the soft switch is activated by each participant, the application code is accessed.

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FIG. 2d shows a flow chart of a method for an administrator (or a knowledgeable user) to assign a web site's URL to a cell phone device soft switch and then to transmit the soft switch and the assigned URL to the network server. The soft switches and assigned URL are then downloaded to the network participants as participants sign on to the network so that the soft switch(es) and the URL(s) are contained on all the network participants' cell phone devices and, when the soft switch is activated by each cell phone device user, the web site is accessed.

#### PREFERRED EMBODIMENT OF THE INVENTION

A method and cell phone device communication system that joins a communications network of participants using handheld cell phones having integrated, CPU, PDA and GPS circuitry with advanced communications software (ACS) application programs that allow an administrator with a personal computer or other appropriate input device to modify other participants' remote cell phone devices that contain ACS symbology and nomenclature and soft switch nomenclature and functions for a specific environment such as police, work, fire, military or other group of interest.

A communication network server acts as a forwarder for IP communications between any combination of cell phone device users and/or PC based users. Network participant location, identity and status messages are sent to the server by each user. Network participant entered symbols representative of entities (some times called tracks) are also sent to the server. Because this data is of interest to all the network participants, the server forwards the data received from one participant to all other participants, thus providing the information necessary for all network participants to know the identity, location and status of all other network participants for display on each participant cell phone device map display with symbols.

The server also acts as a forwarder of data addressed from one participant to one or more addressed participants, thus permitting the transmission of free text, preformatted messages, photographs, video, E-mail and URL data from one network participant to other selected network participants.

The above functions can also be accomplished using peer to peer WiFi, WiMax or other peer to peer communications. However, for use with cellular communications and to assure the level of security that cell phone companies require, a centralized static IP routable server is used.

The IP server also fills another role of being a database from which data can be requested by network participants (i.e. maps, satellite images, and the like) or can be pushed to network participants (i.e. symbology and soft switch changes, or other data).

Referring now to the drawings and, in particular, FIG. 1, a small handheld cellular phone device 10 is shown that includes a personal digital assistant (PDA) and a global positioning system (GPS) receiver communications device integrated in housing 12, an on/off power switch 19 for the entire device, a microphone 38, and an LCD display 16 that is also a touch screen system. The small area 16a is the navigation bar that depicts the cell phone, GPS and other status data and the active software. Each cell phone device includes a CPU and databases that store information useful in the communication network. The CPU also includes a symbol generator for creating touch screen display symbols discussed herein. With the touch screen 16, the screen symbols are entered through GPS inputs or by the operator using a stylus 14 (or operator finger) by manipulatively directing the stylus 14 to

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literally touch display 16. The soft switches 16d displayed on the display 16 are likewise activated by using a stylus 14 and physically manipulatively directing the stylus 14 to literally touch display 16. The display x, y coordinates of the touched point are known by a CPU in the PDA section of the communication system in housing 12 that can coordinate various information contained in the PDA relative to the x, y coordinate position on the display 16. Inside housing 12 is contained the conventional cellular phone elements including a modem, a CPU for use with a PDA and associated circuitry connected to speaker 24 and microphone 38. A GPS navigational receiver that receives signals from satellites that can determine the latitude and longitude of the cellular phone housing 12 can be internal or external to the housing 12. Conventional PDA/cellular phones are currently on sale and sold as a unit (or with an external connected GPS) that can be used for cellular telephone calls and sending cellular SMS and TCP/IP or other messages using the PDA's display 16 and computer (CPU). The GPS system including a receiver in housing 12 is capable of determining the latitude and longitude and, through SMS, TCP/IP, WiFi or other digital messaging software, to also transmit this latitude and longitude information of housing 12 to other cellular phone devices in the communication network via cellular communications, WiFi or radio. The device 10 includes a pair of cellular phone hardware activating buttons 20 to turn the cellular phone on and 22 to turn the cellular phone off. Navigation pad actuator 18 is similar to a joy or force stick in that the actuator 18 manually provides a response to movement commands that can be used by the PDA's software to move a cursor on display 16. Switches 26 and 28 are designed to quickly select an operator specified network software program. Speaker 24 and microphone 38 are used for audio messages. Switch 19 at the top left of device 10 is the power on and power off switch for the entire device 10.

The heart of the invention lies in the applicant's ACS application programs provided in the device. The ACS programs are activated by clicking on an icon on the display 16 to turn the ACS programs on or off. Mounted on and within housing 12 as part of the PDA is the display 16 and the CPU. The internal CPU includes databases and software application programs that provide for a geographical map and georeferenced entities that are shown as display portion 16b that includes as part of the display various areas of interest in the particular local map section.

When looking at display 16, the software switches (soft switches) which appear at the very bottom of the display 16d are used to control by touch many of the software driven functions of the cellular phone and PDA. The soft switches are activated through the operator's use of the navigation pad 18, or a small track ball, force stick or similar hardware display cursor pointing device. Alternatively, the operator may choose to activate the software switches by touching the screen with a stylus 14 (or finger) at the soft switches' 16d locations. When some of the software switches 16d are activated, different software switches appear. The bar display 16d shows the software switches "ZM IN (zoom in)," "ZM OT (zoom out)," "CENT (center)" and "GRAB (pan/grab)" at the bottom of the screen. These software switches enable the operator to perform these functions. The "SWITH (switch)" software switch at the lower right causes a matrix of layered other software switches (soft switches) to appear above the bottom row of switches. Through use of the software switches, the operator can also manipulate the geographical map 16b or chart display.

When looking at FIG. 1, display symbols, depicting permanent or temporary geographical locations and buildings,

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are shown. For example, the police station is shown and, when the symbol is touched by the stylus or finger, the latitude and longitude of the symbol's location, as shown in display section 16c, is displayed at the bottom left of the screen. The bottom right side of display 16c is a multifunction inset area that can contain a variety of information including: a) a list of the communication link participants; b) a list of received messages; c) a map, aerial photograph or satellite image with an indication of the zoom and offset location of the main map display, which is indicated by a square that depicts the area actually displayed in the main geographical screen 16b; d) applicable status information; and e) a list of the communication net participants. Each network participant/user would have a similar device 10 shown in FIG. 1.

Also shown on the display screen 16, specifically the geographical display 16b, is a pair of different looking symbols 30 and 34, a small triangle and a small square, which are not labeled. These symbols 30 and 34 can represent communication net participants having cellular phone devices in the displayed geographical area that are part of the overall cellular phone communications net, each participant having the same device 10 used. The latitude and longitude of symbol 30 is associated within a database with a specific cell phone number and, if available, its IP address and email address. The screen display 16b, which is a touch screen, provides x and y coordinates of the screen 16b to the CPU's software from a map in a geographical database. The software has an algorithm that relates the x and y coordinates to latitude and longitude and can access a communications net participant's symbol or a fixed or movable entity's symbol as being the one closest to that point.

An administrator can be established for the entire communication network of devices with security codes for entering each user's ACS to make changes. All of the participants' cell phone numbers and IP addresses are stored either in each cell phone device or in a database in the server. In order to initiate a telephone call to the cellular phone user (communication net participant) represented by symbol (triangle) 30 at a specific latitude and longitude display on chart 16b, the operator touches the triangle 30 symbol with the stylus 14. The operator then touches a "call" software switch from a matrix of displayed soft switches that would overlay the display area 16c. Immediately, the cellular phone device will initiate a cellular telephone call to the cellular phone device user at the geographical location shown that represents symbol 30. A second cellular phone device user (communication net participant) is represented by symbol 34 which is a small square (but could be any shape or icon) to represent an individual cellular phone device in the display area. The ring 32 around symbol 30 indicates that the symbol 30 has been touched and that a telephone call can be initiated by touching the soft switch that says "call." When this is done, the telephone call is initiated. Other types of symbolic elements on the display 16 can indicate that a cellular phone call is in effect. Additionally, the operator can touch both symbol 34 and symbol 30 and can activate a conference call between the two cellular phone devices and users represented by symbols 30 and 34. Again, a symbolic ring around symbol 34 indicates that a call has been initiated.

Equally important, an administrator or selected user can call the police station or any other specific geographical facility displayed on the map, including: buildings, locations of people, vehicles, facilities, restaurants, or other entities, whose cellular phone numbers and, if available, E-mail addresses, IP addresses and their URLs (previously stored in the database) by touching a specific facility location on the map display using the stylus 14 and then touching the cellular



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phone call switch. As an example, the operator can touch and point to call a restaurant using a soft switch by touching the restaurant location with a stylus and then touching the call soft switch. The cellular phone device will then call the restaurant. Thus, using the invention described herein, each participant can touch and point to call to one or more other net participants symbolically displayed on the map, each of whom has a device as shown in FIG. 1a and can also point to call facilities that had been previously stored in the cell phone device's database. Furthermore, this symbol "hooking" and soft switch technique can be used to go to a fixed facility's website or to automatically enter the fixed facility's E-mail address in an e-mail.

Each cellular phone device is identified on the map display of the other participant/user cell phone devices by a display symbol that is generated on each user cell phone device display to indicate each user's identity. Each symbol is placed at the correct geographical location on the user display and is correlated with the map on the display. The operator of each cellular phone device may also select and enter one or more other fixed entities (buildings, facilities, restaurants, police stations, and the like) and geo-referenced events such as fires, accidents, or other events into its database. This information can be likewise transmitted to all the other participants on the communications net. The map, fixed entities, events and cellular phone device communication net participants' latitude and longitude information is related to the "x" and "y" location on the touch screen display map by a mathematical correlation algorithm.

When the cellular phone device user employs a stylus or finger to touch one or more of the symbols or a location displayed on the cellular phone map display, the cell phone device internal software causes the status and latitude and longitude information concerning that symbol or location to be displayed. In order to hook a symbol or "track" such as another net participant which represents an entity on the geo-referenced map display, or a fixed geographical entity such as a restaurant, police station or a new entity observed by a cell phone device user which is discussed below, the operator points at or near the location of a georeferenced symbol appearing on the cellular phone device display that represents a specific track or specific participant or other entity. The hook application software determines that the stylus is pointed close to or at the location of the symbol and puts a circle, square or other indication around the symbol indicating that amplification information concerning the symbol is to be displayed and indicating that additional data or change in data can be made to the indicated symbol. The hook application code then sends a message to the display application code to display the net participant, facility or entity's amplifying data. The display application code retrieves the primary data and amplification data concerning the symbol or entity from the database and displays the information at the correct screen location. The operator can then read the amplification data that relates to that specific symbol at the specific location. The cell phone device operator can also select soft switches on the touch screen display to change the primary data and amplification data. Furthermore, the operator can use a similar method of hooking and selecting to activate particular soft switches to take other actions which could include: making cellular phone calls, conference calls, 800 number calls; sending a free text message, operator selected preformatted messages, photographs or videos to the hooked symbol; or to drop an entered symbol.

Each known net participant has a cellular phone number, IP address and, if available, E-mail address that is stored in each participant's device database and in the server.

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To use the communication system, the user starts the cellular phone device system by selecting the internal cell phone device and network software which causes: a) the cellular phone to be activated (if it has not already been activated); b) the GPS interface receiver to be established; c) a map of the geographic area where the user is located and user's own unit symbol to appear at the correct latitude and longitude on the map on the display; d) the locations of fixed facilities such as restaurants, hotels, fire departments, police stations, and military barracks, that are part of the database to appear as symbols on the map; e) the device selected item read out area which provides amplification information for the communications net participants or the entity that has been hooked (on the display screen) to appear on the display; f) an insert area that contains various data including: the list of net participants, a list of messages to be read, an indication of what portion of the map is being displayed in major map area and other information to appear on the display; and g) a row of primary software created "soft switches" that are always present on the display to appear.

For point to call network units and fixed facilities, the application code detects the x, y display screen location of the symbol that is designated by the user's stylus and translates the x, y coordinates to latitude and longitude and then: (1) searches the database to find the symbol at that location, (2) places a "hook" indicator (a circle, square or other shape) around the symbol, (3) displays any amplifying data and (4) obtains the symbol's associated phone number (or for VoIP calls an IP address) from the database. Upon receiving a "call" designation from the soft switch, the user's device's ACS causes the appropriate phone number or IP number to be called. Upon receiving an indication that the phone number is being called, the ACS software application code places a box around the symbol (color, dashed or the like). When the call is connected, the box changes to indicate that the connection is made. When the other party (net user) hangs up, the box disappears.

As each of the cell phone device participants reports its identity, location and status to the other participants' devices, the received data is geo-referenced and filed in their databases that are accessible by identity and by location. This data is then displayed on each cell phone display. When a request for data is received by touching the display screen, a location search is made by the ACS and a symbol modifier (circle, square, or the like) is generated around the symbol closest to the x, y position of the stylus. When the application code receives a soft switch command to place a phone call or send data, the software uses the phone number (or IP address) associated with the unit to place the call or to send data.

If a cell phone device receives a digital message that a call is being received, the receiving cell phone's ACS application code places a box or similar object around the transmitter symbol indicating who the call is from. When the call is answered, the application software changes the visual characteristics of the box. In a similar manner, when a phone receives a digital text message, photograph or video, a box appears around the transmitter's symbol indicating the transmitter of the message. The point to call network devices are participants and each one has a similar device with the same software for use as a total participant network. Other situations for calling facilities that are not part of the network are described below.

Thus, the user device is capable of initiating a cellular phone call by touch only, and initiating conference calls by touching the geo-referenced map symbols. Furthermore, by using a similar symbol touching technique, a cellular phone can send user selected messages to cause a remote cellular

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phone to display and optionally announce emergency and other messages and to optionally elicit a response from the remote cellular phone device.

Each of the network participants have the same communication cell phone/PDA/GPS device described herein. The method, device and system include the ability of a specific user device to provide polling in which other cellular phone devices, using SMS, internet or WiFi, report periodically based on criteria such as time, speed, distance traveled, or a combination of time, speed and distance traveled. The user can manually poll any or all of the cell phone devices that are used by all of the participants in the communication network having the same devices. The receiving cellular phone device application code responds to the polling command with the receiving cellular phone device's location and status, which could include battery level, GPS status, signal strength and entered track data. Optionally, the cell phone device users can set their cell phone devices to report automatically, based on time or distance traveled intervals or another criterion.

The soft switch application software causes a visual display on the touch screen of a soft switch matrix such as five switches across by six switches up (or another matrix) in which switch names are placed on the cellular/PDA display. The soft switch network application software knows the touch screen location of each of the switches in the matrix and the software routines that will be activated upon touching the switch. The switch names can be customized for a specific group of users such as police, firemen and military.

The bottom row of soft switches displayed on the touch screen remains visually fixed. These switches concern the functions that are the most often used. One of the switches causes a matrix of other soft switches to appear above the visually fixed soft switches. These switches are function soft switches, the activation of any one of which causes a different matrix of soft switches to appear, which are known as the action soft switches. When the action soft switches appear, the function soft switch, which caused the action soft switches to appear, itself appears as a label in the lower left (or some other standard location) indicating to the operator the function soft switch that has been selected. When the operator selects an action soft switch, the appropriate application software to accomplish the action is activated.

Upon receiving a soft switch activation message, the ACS accesses the appropriate task execution software which accomplishes the required tasks including: entry of track data, entry of track amplification data, transmission of alpha/numeric messages, photographs, videos, display of messages to be read, selection of map types, placing voice calls, placing conference calls and 800 conference calls, presenting different potential operator selections, control of the display actions, polling network participants, establishing nets of participants (groups) so that communications with all in the group can be accomplished with a single soft switch action, and dropping a previously entered track. By providing a matrix and layers of soft switches which are easily manipulated by a stylus, each cell phone device in the communication network is extremely efficient in accessing and coordinating the appropriate application program for the device to perform.

Referring now to FIGS. 2a through 2d, flow diagrams are shown that represent the ability of a system administrator (or a knowledgeable user) to change the cell phone/PDA soft switches and displayed symbology from one specific operational environment to another. Such a capability permits the user with a common ACS program for, as an example, police, in which the soft switches and their associated symbols had been defined to enable the rapid entry of police car and sus-

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pect symbols on the display, to be reprogrammed for use with fire departments in which the soft switches and their associated symbols are redefined to enable the rapid entry of fire trucks and different types of fire symbols. Reprogramming each ACS cell phone in the network as each cell phone user signs on the network assures that all cell phone device users in the network have all the same soft switches and symbology available for that particular operating environment. The administrator can customize each user's cell phone device for a specific environment such as police, fire or military by customizing each of the cell phone devices with specific symbology and specific soft switches.

In order to make the soft switches applicable for different uses, the system administrator can use a personal computer (PC) with soft switch naming and symbol generation software to associate the named or renamed soft switches with new symbols. The administrator can then upload the named or renamed soft switches to the network server. When the cell phone network participants sign on the network, the symbology and the soft switches associated with the symbology are automatically downloaded to the network participants' cell phone devices. Thus, the symbology and soft switches for different organizations can be customized to meet various users' requirements. This flexibility is especially important within the police and fire department operational environments, as there are geographical areas of the United States where law enforcement and fire departments use different voice codes and different symbols when responding to emergencies. An administrator (or a knowledgeable user) can use a method similar to the above to rename or create new soft switches and associate them with its or another developer's software, with E-mail addressing, web site addresses, symbol modifiers and text messages, thus causing the soft switches and the data that they are associated with to be downloaded to the network participants' cell phone devices.

FIG. 2a shows a flow chart of a method for an ACS network administrator (or a knowledgeable user) to rename or create new soft switches and assign symbology to them so that all cell phone devices in the network are reconfigured to a new standard. Using a PC, an administrator (or a knowledgeable user) creates symbols using a paint program and names unused or renames ACS soft switch(es) in the soft switch matrix and associates each with a newly or previously created symbol. An ACS administrator (or a knowledgeable user) uploads the renamed ACS soft switch(es) and their associated symbology to the server which then transmits the new or renamed soft switch(es) and their associated symbols to the remote ACS network participant(s) as they join the network, after which their cell phone devices commence to report their identity, location and status. When the ACS operator(s) use(s) the new or renamed ACS soft switch(es), they cause the appropriate symbol(s) to appear.

FIG. 2b shows a flow chart of a method for an ACS network administrator (or a knowledgeable user) to create new soft switches or rename switches and assign symbol modifiers or preset text messages to the soft switches so that all cell phone devices in the network are reconfigured to a new standard. Using a personal computer (PC), an administrator (or knowledgeable user) creates a symbol modifier shape using a paint program or similar software to create a symbol modifier or creates (types) a preset text message after which the administrator names unused or renames old soft switch(es) in the soft switch matrix. The administrator (or a knowledgeable user) then associates each soft switch with either a symbol modifier or a preset text message. The administrator uploads the new ACS soft switch(es) and their associated symbol modifier(s) or preset text message(s) to the network server

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which then transmits the new soft switch(es) and either the symbol modifier(s) or the preset text message(s) to the remote ACS network participant(s) as they join the network, after which their cell phone/PDAs commence to report their identity, location and status. When the ACS operator(s) use(s) the new or renamed ACS soft switch(es), the symbol modifier appears surrounding or on the symbol that was hooked when the modifier was selected or causes the display of a preset text message, either of which are then transmitted to a hooked network participant or to all the network participants.

FIG. 2c shows a flow chart of a method for an ACS network administrator (or a knowledgeable user) to create new soft switches or rename switches and assign the soft switch to software that is in the applicant's software library so that all cell phone devices in the network are reconfigured in a manner that permit them to access the application software through use of the soft switch. Using a PC, an administrator (or a knowledgeable user) names an unused or renames an old soft switch in the soft switch matrix. An administrator (or knowledgeable user) then associates each soft switch with a call to software that is in the application library. The administrator (or knowledgeable user) then uploads the new ACS soft switch and the associated software to the server which then transmits the new soft switch and the application software to the remote ACS network participant(s) as they join the network, after which, their cell phone devices commence to report their identity, location and status. When the cell phone device operator touches the new or renamed soft switch, it causes the downloaded application software to activate and occupy the screen on a PDA or to appear as a window on the PC or Tablet. When finished using the software, the cell phone device operator closes the application software which causes the standard ACS map, symbology, readout areas and soft switches to reappear.

FIG. 2d shows a flow chart of a method for an ACS network administrator (or a knowledgeable user) to create new soft switches or rename switches and assign the soft switch to a web site's URL so that all cell phone devices in the network are reconfigured in a manner that permits them to access the URL through use of the soft switch. Using a PC, an administrator (or a knowledgeable user) names an unused or renames an old soft switch in the soft switch matrix. An administrator (or a knowledgeable user) then associates a soft switch with an URL. The administrator (or knowledgeable user) then uploads the new ACS soft switch and the associated URL to the server which then transmits the new soft switch and the URL to the remote ACS network participant(s) as they join the network, after which their cell phone devices commence to report their identities, locations and status. When the cell phone device operator touches the new or renamed soft switch, it causes URL to be sent from the handset, which then causes the web site to occupy the display screen or to appear as a window on the PC or Tablet. When finished using the software, the cell phone/PDA operator closes or minimizes the software which causes the standard ACS map, symbology, readout areas and soft switches to reappear.

The instant invention has been shown and described herein in what is considered to be the most practical and preferred embodiment. It is recognized, however, that departures may be made there from within the scope of the invention and that obvious modifications will occur to a person skilled in the art.

What is claimed is:

1. A method of establishing a cellular phone communication network for designated participants, each having a similarly equipped cellular phone that includes the capability for: voice communications, free and operator selected text messages data exchange, photograph and video capture and trans-

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missions, a CPU, a GPS navigation system and a touch screen display comprising the steps of:

- (a) generating one or more symbols on the touch display screen, each representing a different participant that has a cellular phone that includes software for said voice communication, free and operator selected text messages exchange, photograph and video exchange, a CPU, said GPS system and a touch screen;
- (b) providing and storing in each of the participant cellular phones one or more cellular phone telephone numbers, each cellular phone number of which relates to a different symbol of each of the participants in the communication network or on a server;
- (c) providing initiating cellular phone calling software in each cellular phone that is activated by touching a symbol on the touch display that automatically initiates a cellular phone call using the stored cellular phone number to the participant represented by the symbol;
- (d) generating a geographical location chart on said display screen to show the geo-referenced location of each of the symbols representing the participants in the communication network by latitude and longitude; and
- (e) using software to create new or modify old symbols and associate the symbol to a new unused soft switch or a renamed existing soft switch and then downloading the new or renamed soft switch and the associated symbol to the cell phone and remote cell phone(s) so that the new or renamed soft switch and associated symbol can be used on the cell phone.

2. A method as in claim 1, including the steps of: assigning soft switches to enter symbol modifiers or transmit preset text message data that are then downloaded to the user's cell phone and remote cell phone(s) so that the cell phone soft switch causes the designated symbol modifier or preset text message to be transmitted.

3. A method as in claim 1, including the step of: assigning soft switches to access application software and then downloading the soft switch and the assigned application software to the user's cell phone and remote cell phone(s) so that the cell phone soft switch accesses the assigned application software and when the application software is closed, causes the network participant's display and messaging software to reappear.

4. A method as in claim 1, including the step of: assigning a soft switch to a web site URL address and then downloading the soft switch and the URL address to the user's cell phone and remote cell phone(s) so that, when the soft switch is activated, the soft switch accesses the web site, upon which the web site appears on the display and closing the web site causes the network participant's display and messaging software to reappear.

5. A communication system to provide a cellular phone network for a group of participants, each of the participant's having an individual portable cellular phone that includes voice communication, free and operator selected text messages, photographs and video, a CPU and a GPS navigational system that can accurately determine the location of each cellular phone, each of the cellular phones in the communications net of participants containing:

- said CPU and memory;
- a touch screen display;
- symbol generator in said CPU that can generate symbols that represent each of the participants in the communication network on the display screen;
- a database that stores the individual telephone numbers related to each of the symbols each of which represents a participant in the communication network;



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cellular phone call initiating software in said CPU connected to the telephone number database and the touch screen and the symbols on the touch screen whereby touching an individual symbol will automatically initiate a cellular phone telephone call to the user represented by the symbol;

said display including databases that display geographical information that includes showing the geo-referenced location of each of the symbols representing participants in the communication network, fixed locations, and entered items of interest; and

administrator software to create new or modify existing display symbols and associating a symbol to a new unused soft switch or a renamed existing soft switches and then downloading the new or renamed soft switch to the cell phone and remote cell phone(s) so that the symbols and new renamed soft switches can be used on all network users cell phones.

6. A system as in claim 5, including:  
 administrator software to assign soft switches to enter symbol modifiers or reset text message data into a digital message and then downloading the software to the user's cell phone and remote cell phone(s) so that the cell phone soft switch causes the designated data to be transmitted.

7. A system as in claim 5, including:  
 administrator software to assign soft switches to access application software and then download the soft switch and the assigned application software to the user's cell phone and remote cell phone(s) so that the cell phone soft switch accesses the assigned application software and, when the application software is closed, causes the network participant's display and messaging software to reappear.

8. A system as in claim 5, including:  
 administrator software to assign soft switches to a web site URL address and then download the soft switch and the URL address to the user's cell phone and remote cell phone(s) so that, when the soft switch is activated, the soft switch accesses the web site, upon which the web site appears on the display and closing the web site causes the network participant's display and messaging software to reappear.

9. A cellular phone for use in a communication network for a plurality of participants comprising:  
 a cellular phone transmitter and receiver for transmitting and receiving voice communication, free and operator selected text messages, photographs, and video;  
 a small handheld portable housing containing said cellular phone transmitter and receiver;  
 a touch display screen mounted in said housing;  
 a modem connected to said cellular phone transmitter and receiver;  
 a CPU connected to said cellular phone transmitter and receiver;

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a GPS navigation system connected to said CPU and to said cellular phone transmitter and receiver on said touch screen;

a database connected to said CPU that includes a list of telephone numbers that relate to specific symbols;

a symbol generator connected to said CPU and said database for generating symbols on said touch display screen;

CPU software that causes the exchange of data with other participants with a cellular phone;

call initiating software connected through said CPU and said telephone database and said symbol generator whereby, when a user touches the symbol displayed on a touch display screen, the cellular phone call is automatically initiated to the cellular phone represented by the symbol;

a geographical database connected to said CPU to provide a geographical display on said touch screen representing a defined geographical area that also displays symbols representing each of the participants by latitude and longitude; and

administrator software to create new or modify old symbols and associate the symbol to a new unused soft switch or a renamed existing soft switch and then download the new or renamed soft switch to the cell phone and remote cell phone(s) so that the new or renamed soft switch and symbol can be used on the cell phone.

10. A cell phone as in claim 9, including:  
 administrator software to assign soft switches to enter symbol modifiers or preset text message data into a digital message and then download the software to the user's cell phone and remote cell phone(s) so that the cell phone soft switch causes the designated data to be transmitted.

11. A cell phone as in claim 9, including:  
 administrator software to assign soft switches to access application software and then download the soft switch and the assigned application software to the user's cell phone and remote cell phone(s) so that the cell phone soft switch accesses the assigned application software and, when the application software is closed, causes the network participant's display and messaging software to reappear.

12. A cell phone as in claim 9, including:  
 administrator software to assign soft switches to a web site URL address and then download the soft switch and the URL address to the user's cell phone and remote cell phone(s) so that, when the soft switch is activated, the soft switch accesses the web site, upon which the web site appears on the display and closing the web site causes the network participant's display and messaging software to reappear.

\* \* \* \* \*

# **EXHIBIT 4**

**TO  
COMPLAINT FOR FALSE  
MARKING, TORTIOUS  
INTERFERENCE WITH  
CONTRACT, INTENTIONAL  
INTERFERENCE WITH  
ECONOMIC ADVANTAGE, AND  
UNFAIR COMPETITION**





US008126441B2

(12) **United States Patent**  
**Beyer, Jr.**

(10) **Patent No.:** **US 8,126,441 B2**  
(45) **Date of Patent:** **Feb. 28, 2012**

(54) **METHOD OF ESTABLISHING A CELL PHONE NETWORK OF PARTICIPANTS WITH A COMMON INTEREST**

(75) Inventor: **Malcolm K. Beyer, Jr.**, Jupiter Inlet Colony, FL (US)

(73) Assignee: **Advanced Ground Information Systems, Inc.**, Jupiter, FL (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 809 days.

(21) Appl. No.: **11/615,472**

(22) Filed: **Dec. 22, 2006**

(65) **Prior Publication Data**

US 2008/0076418 A1 Mar. 27, 2008

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 11/308,648, filed on Apr. 17, 2006, now Pat. No. 7,630,724, and a continuation-in-part of application No. 10/711,490, filed on Sep. 21, 2004, now Pat. No. 7,031,728.

(51) **Int. Cl.**

**H04M 3/42** (2006.01)

**H04M 11/00** (2006.01)

**H04M 3/00** (2006.01)

(52) **U.S. Cl.** ..... **455/414.2; 455/403; 455/420**

(58) **Field of Classification Search** ..... **455/403, 455/420, 414.2**

See application file for complete search history.

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*Primary Examiner* — Kamran Afshar

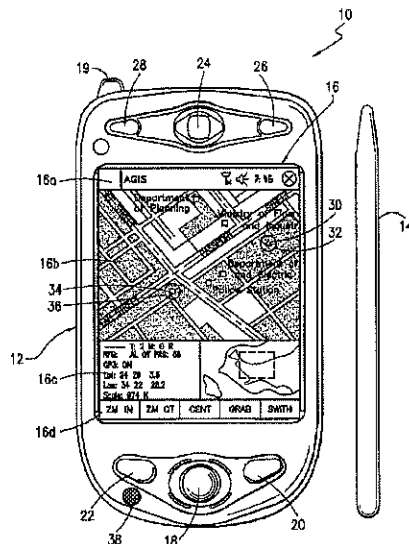
*Assistant Examiner* — Omoniyi Obayanju

(74) *Attorney, Agent, or Firm* — Malin Haley DiMaggio Bowen & Lhota, P.A.

(57) **ABSTRACT**

A method, a combined cellular, PDA communication device and system having specialized software applications for allowing a plurality of combined cellular phone/PDA device users to monitor each others' locations and status, to initiate cellular phone calls by touching a symbol on the touch screen display with a stylus which can also include point to call conferencing calling. Each participant's cellular phone/PDA device includes a GPS navigation receiver with application software for point to call cellular phone initiation to participants and geographical entities including vehicles, persons or events, conference calls and video transfers. The method, device and system also includes several features that allow each individual cell phone to poll the network participants to create a network of participants who have symbols displayed on each user's PDA display screen and providing application software in each cell phone with a server to allow individual users to create, by polling the network, a group of network participants having a common interest, or a network of friends and family for a network of all active participants. The method, device and system employed herein can also be used to establish an anonymous dating service that allows individual participants using their cell phones to identify and contact others for dating or social interaction without giving away their actual name and phone number.

**8 Claims, 8 Drawing Sheets**



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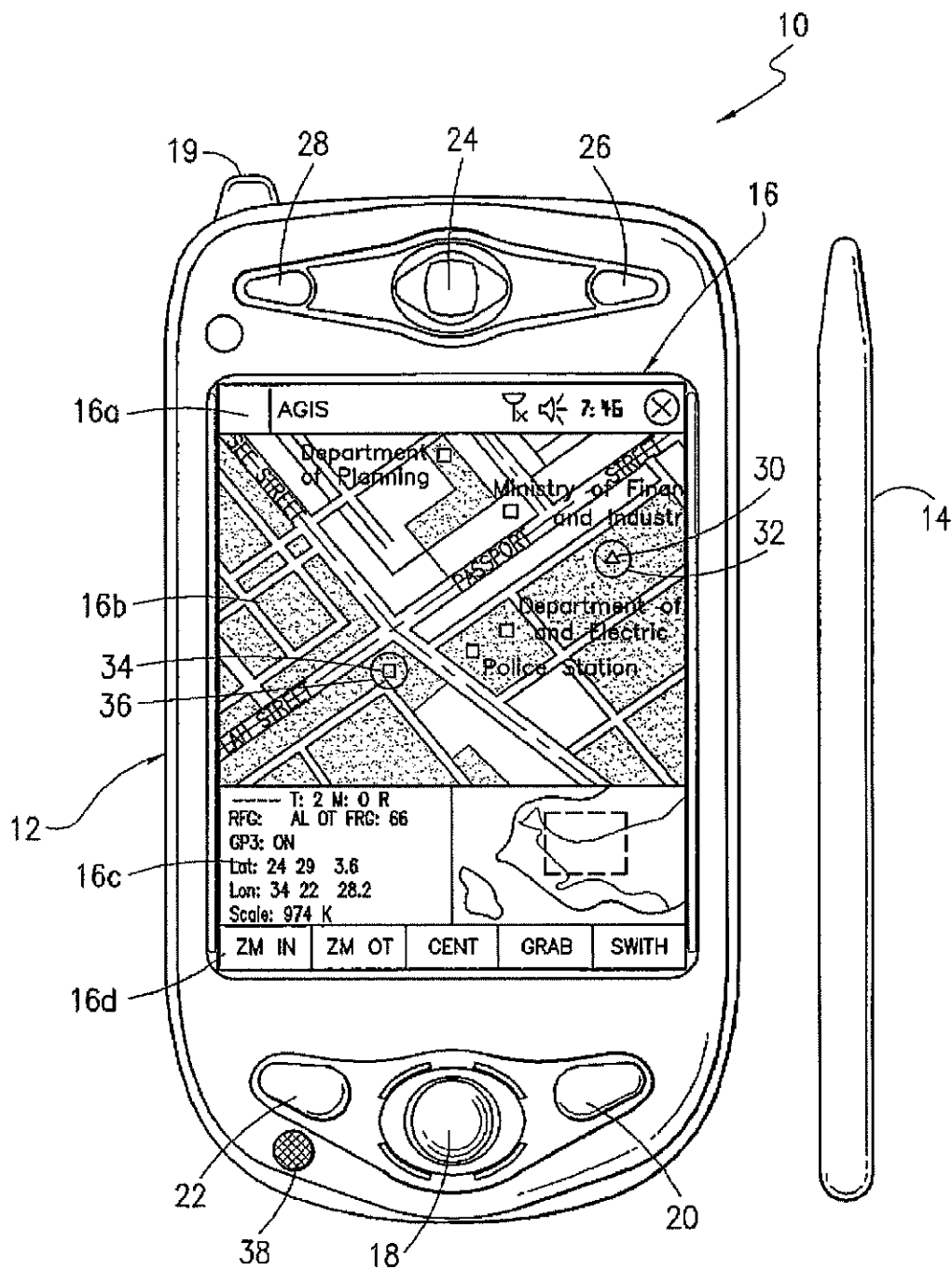


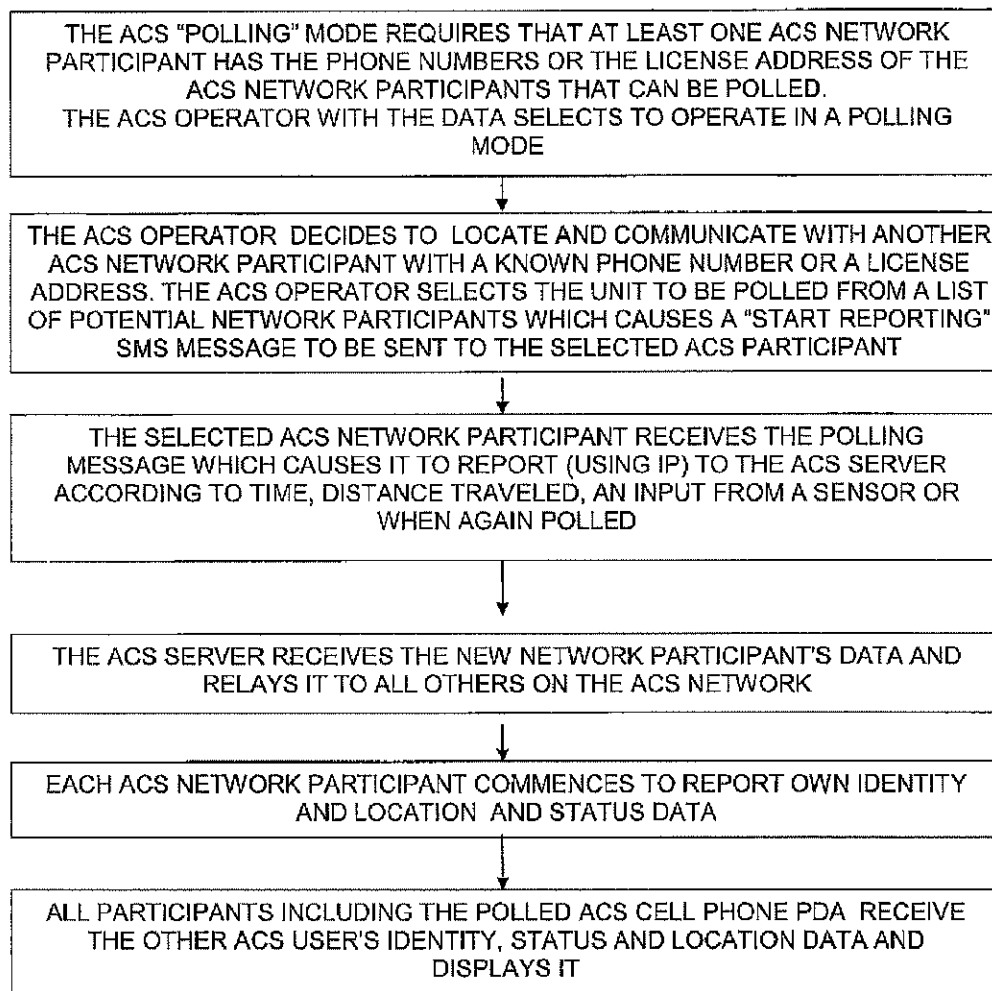
FIG. 1

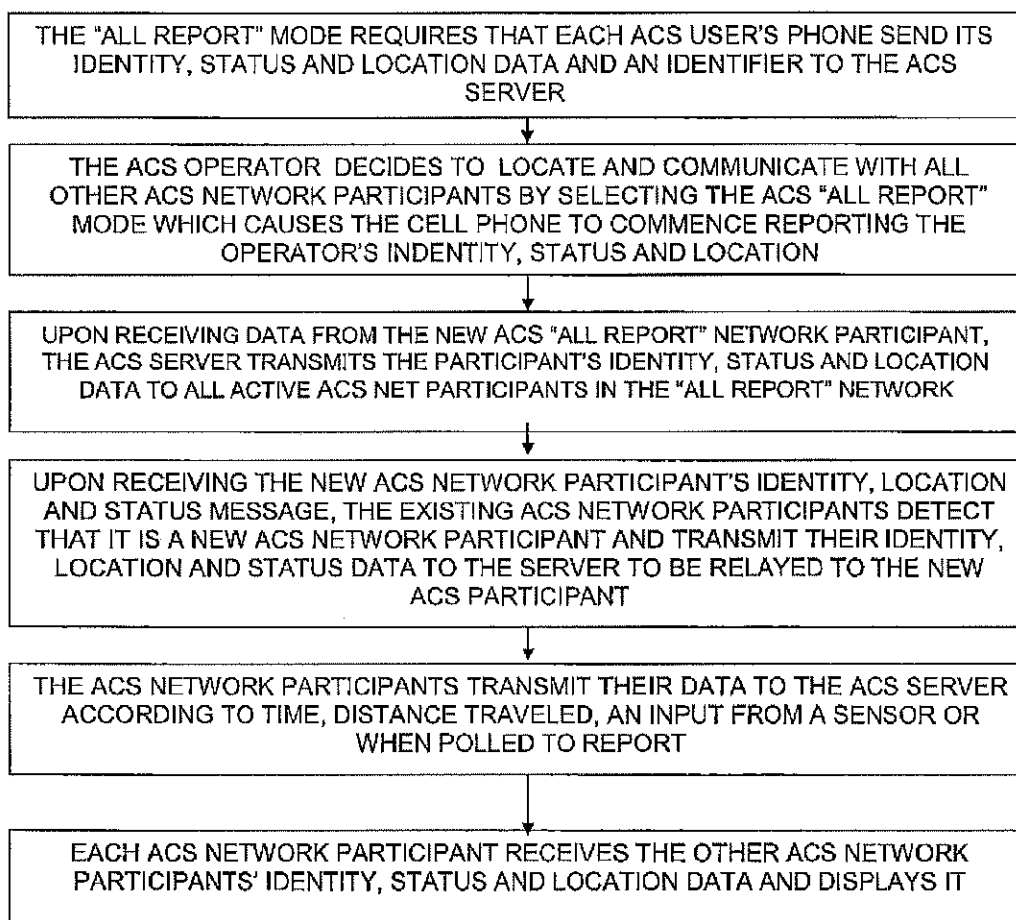
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**Fig. 2a**

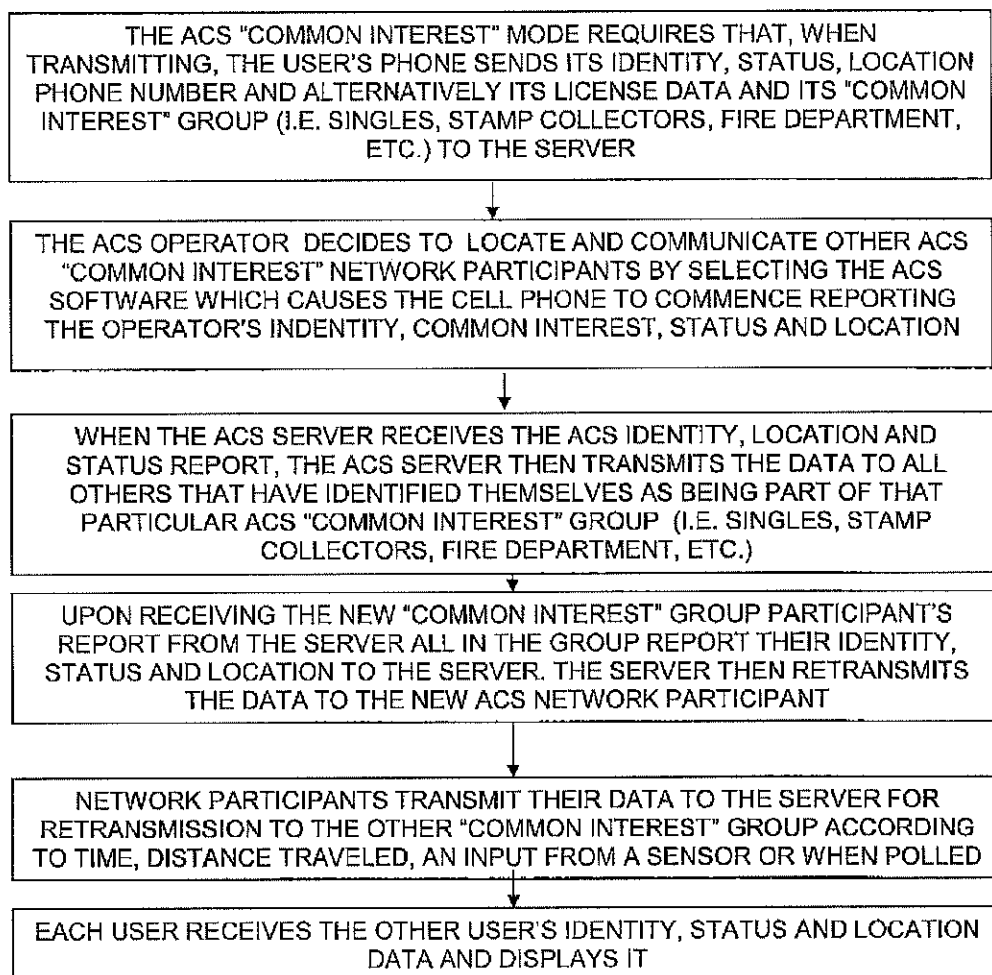
***Fig. 2b***

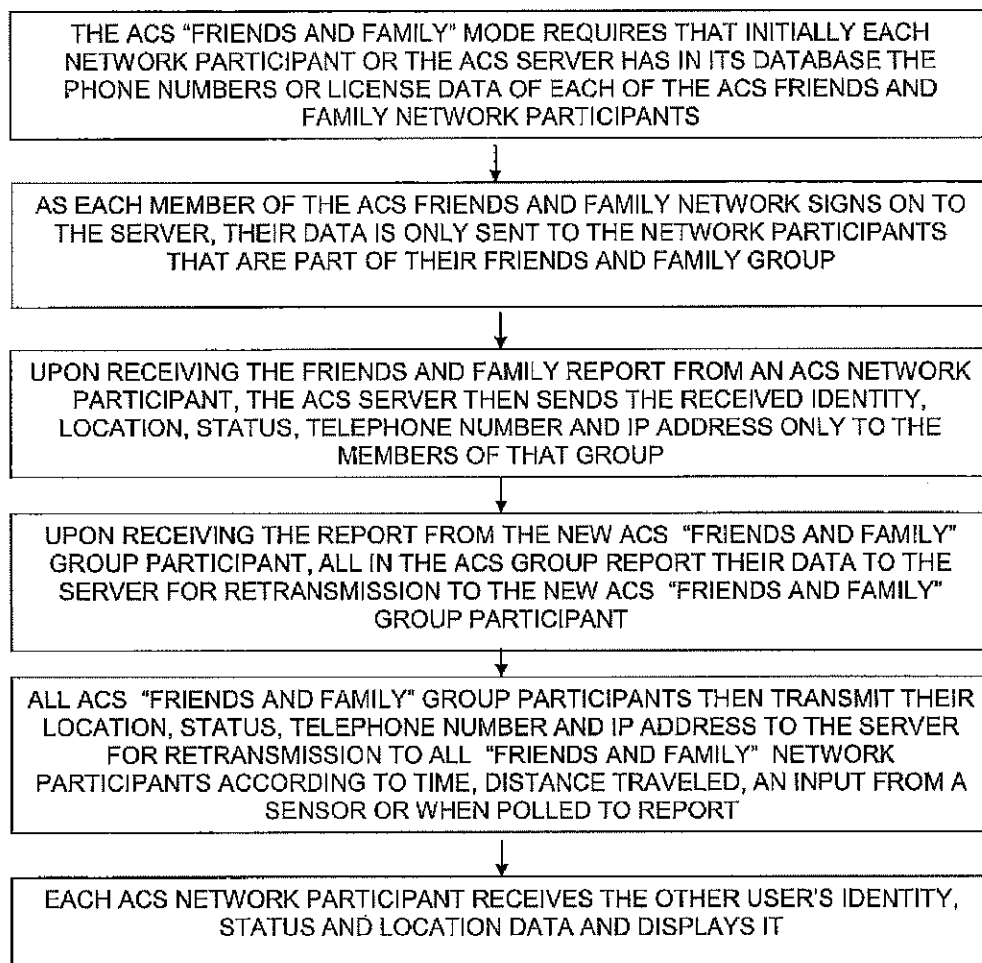
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Fig. 2c

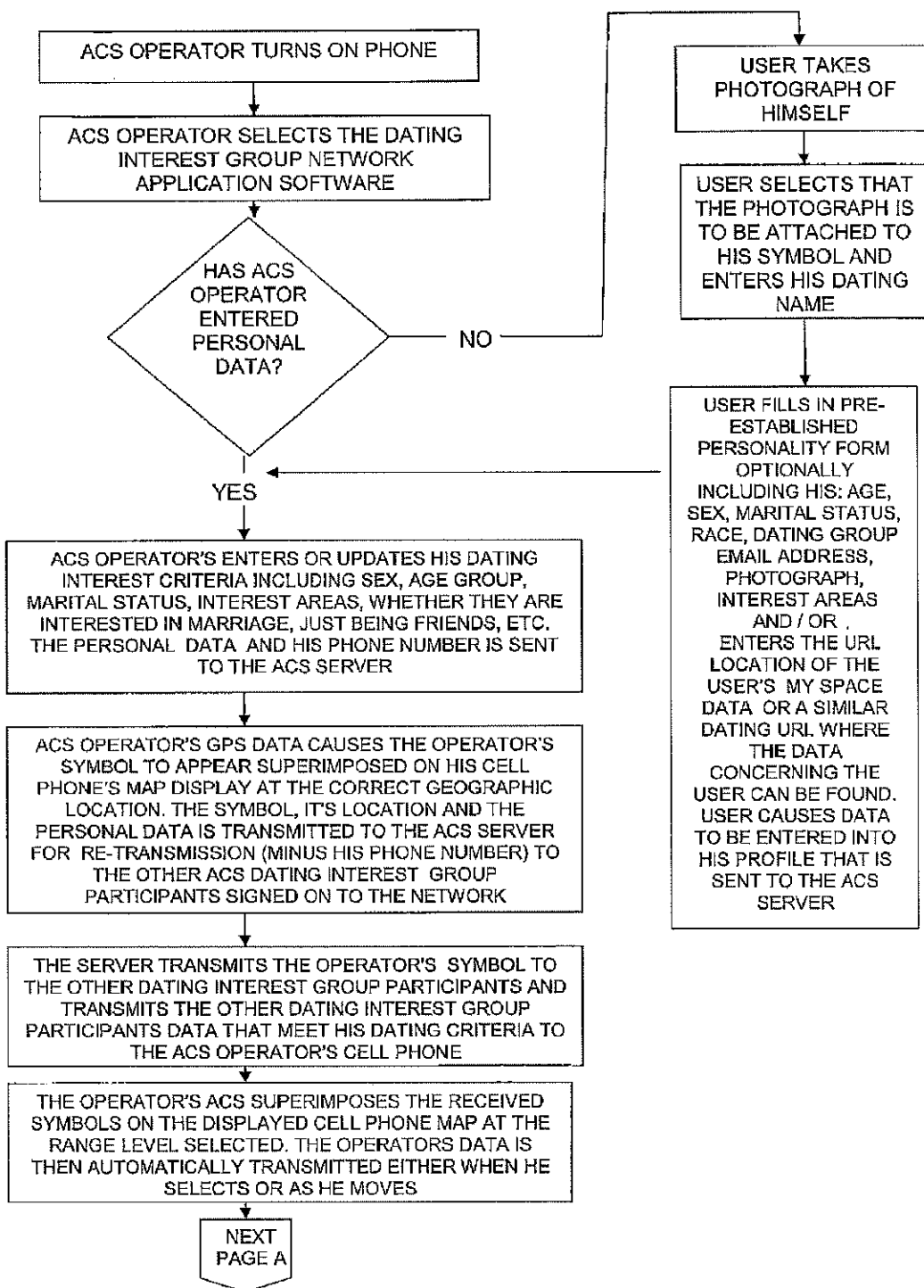
**FIG. 2d**

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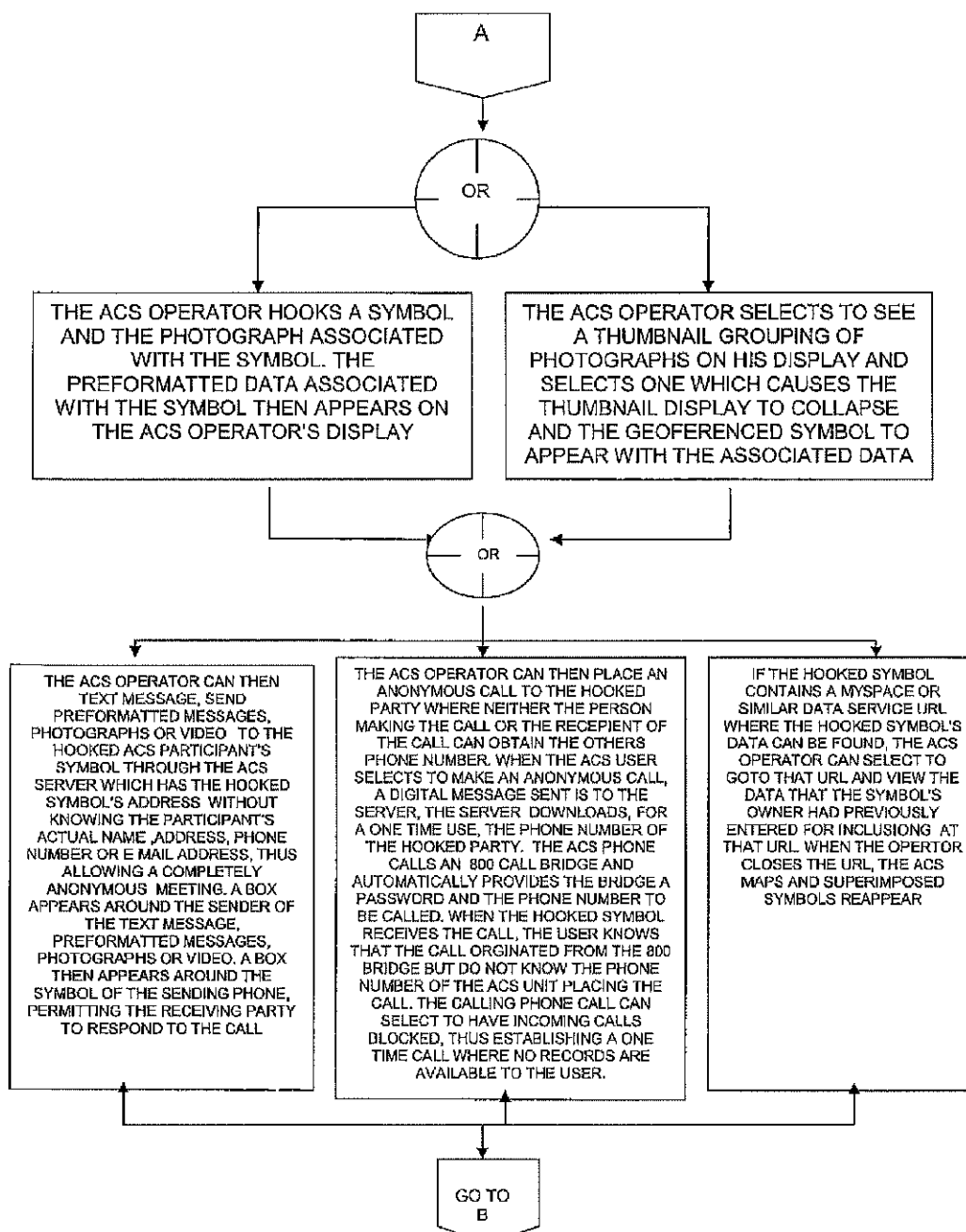
**Fig 3a**

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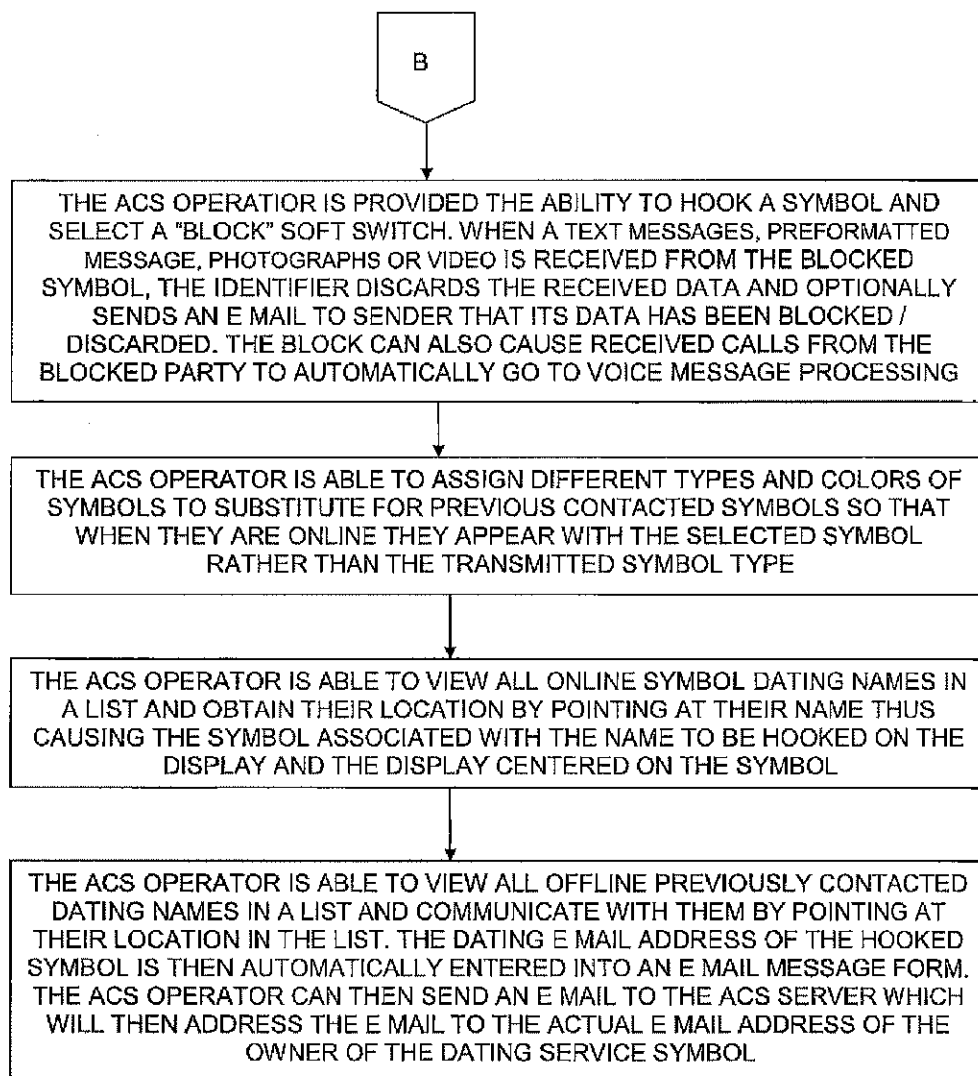
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**Fig 3b**



**Fig 3c**

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# **METHOD OF ESTABLISHING A CELL PHONE NETWORK OF PARTICIPANTS WITH A COMMON INTEREST**

This application is a continuation-in-part of U.S. patent application Ser. No. 11/308,648 filed Apr. 17, 2006 which is a continuation-in-part of U.S. patent application Ser. No. 10/711,490 now U.S. Pat. No. 7,031,728.

## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention**

A communications system using a plurality of cellular phones each having an integrated PDA and GPS receiver for the management of two or more people through the use of a communications network. The method and system provide each user with an integrated handheld cellular/PDA/GPS/phone that has advanced communication software application programs (hereinafter referred to as ACS) and databases used in conjunction with a remote server that enable a user to establish a cell phone network of cell phone participants having a common interest or relationship.

### **2. Description of Related Art**

The purpose of a communications system is to transmit information bearing digital messages from a source, located at one point, to a user destination, located at another point some distance away. A communications system is generally comprised of three basic elements transmitter, information channel and receiver. One form of communication in recent years is cellular phone telephony. A network of cellular communication systems set up around an area such as the United States allows multiple users to talk to each other, either on individual calls or on group calls. Some cellular phone services enable a cellular phone to engage in conference calls with a small number of users. Furthermore, cellular conference calls can be established through 800 number services. Cellular telephony also now includes systems that include Global Positioning System (GPS) navigation that utilizes satellite navigation. These devices thus unite cellular phone technology with navigation information, computer information transmission and receipt of data.

The method and operation of communication devices used herein are described in U.S. Pat. No. 7,031,728 which is hereby incorporated by reference and pending U.S. patent application Ser. No. 11/308,648.

It would be advantageous to provide a communication network with a plurality of cell phones wherein polling could be performed by one or more users to find other remote cell phone participants that share a common interest or common relationship for interactive communication.

## **SUMMARY OF THE INVENTION**

Applicant's communication system and method described herein is embodied in the advanced communication software (ACS) application programs developed by applicant and installed in the integrated PDA/GPS cell phones used herein.

A plurality of cellular phone/PDA/GPS devices each having ACS application programs and databases provides a communication network in conjunction with a remote server with the ability to: a) selectively poll each of the other PDA/GPS phone devices with each participant to start reporting its position and status information to all or selected users equipped with the same cellular phone/PDA software devices in the communications net so that each of the devices exchange location, status and other information, (b) display information by touching the display screen at remote phone's

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location on the PDA display, (c) make calls to or send data to remote phones by touching their display symbol and selecting the appropriate soft switch; (d) layer a sufficient number of switches or buttons on the PDA display to perform the above functions without overlaying the map; and (e) to allow a polling mode in each cell phone that allows a user to contact other cell phone users that have a common interest or relationship for communication.

A communication server acts as a forwarder for IP communications between any combination of cell phone/PDA users and/or PC based users. Network participant location, identity and status messages are sent to the server by each user. Network participant entered tracks are also sent to the server. Because this data is of interest to all the network participants, the server forwards the data received from one participant to all other participants, thus providing the information necessary for all network participants to know the identity, location and status of all other network participants.

The server also acts as a forwarder of data addressed from one participant to one or more addressed participants, thus permitting the transmission of free text, preformatted messages, photographs, video, E-mail and URL data from one network participant to other selected network participants.

The above functions can also be accomplished using peer to peer WiFi, WiMax or other peer to peer communications. However, for use with cellular communications and to assure the level of security that cell phone companies require, a centralized static IP routable server is used.

The IP server also fills another role of being a database from which data can be requested by network participants (i.e. maps, satellite images, etc.) or can be pushed to network participants (i.e. symbology and soft switch changes, etc.).

It is an object of this invention is to enable each participant in the communications net to poll the other net participants to find other cell phone users having a common interest or relationship.

Another object of this invention is to enable each participant in the communications net to be able to easily transmit an entity of interest to the other participants of the net by touching the display screen at the entity's location on the map, selecting the soft switch representative of the entity's identity, causing the symbol's location and identity to be transmitted on the network.

In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with particular reference to the accompanying drawings.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 shows a front plan view of a cellular phone/PDA/GPS having a touch screen.

FIG. 2a shows a flow chart of a method for providing a polling network among the network's identification, location and status reporting participants.

FIG. 2b shows a flow chart of a method that provides an all report network among the network's identification, location and status reporting participants.

FIG. 2c shows a flow chart of a method that provides a common interest network among the network's identification, location and status reporting participants.

FIG. 2d shows a flow chart of a method that provides a friends and family network among the network's identification, location and status reporting participants.

FIG. 3a shows the first segment of a flow chart that allows interested parties to contact other people for dating or social interaction purposes using the present invention.

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FIG. 3b is a continuation of the flow chart begun in FIG. 3a.  
FIG. 3c is the termination portion of the flow chart begun in  
FIGS. 3a and 3b.

#### PREFERRED EMBODIMENT OF THE INVENTION

A method and communication system that joins a communications network of participants using handheld cell phones having integrated PDA and GPS circuitry with ACS application programs that allow a participant having an Advanced Communications Software (ACS) equipped cell phone to activate and control other participants' remote cell phones/PDAs that contain ACS.

A communication server acts as a forwarder for IP communications between any combination of cell phone/PDA users and/or PC based user. Network participant location, identity and status messages are sent to the server by each user. Network participant entered tracks are also sent to the server. Because this data is of interest to all the network participants, the server forwards the data received from one participant to all other participants, thus providing the information necessary for all network participants to know the identity, location and status of all other network participants.

The server also acts as a forwarder of data addressed from one participant to one or more addressed participants, thus permitting the transmission of free text, preformatted messages, photographs, video, E-mail and IRL data from one network participant to other selected network participants.

Referring now to the drawings and, in particular, FIG. 1, a small handheld cellular phone 10 is shown that includes a personal digital assistant (PDA) and a global positioning system receiver (GPS) communications device integrated in housing 12 that includes an on/off power switch 19, a microphone 38, and an LCD display 16 that is also a touch screen system. The small area 16a is the navigation bar that depicts the telephone, GPS and other status data and the active software. Each cell phone includes a CPU and databases that store information useful in the communication network. The CPU also includes a symbol generator for creating touch screen display symbols discussed herein. With the touch screen 16, the screen symbols are entered through GPS inputs or by the operator using a stylus 14 (or operator finger) by manipulatively directing the stylus 14 to literally touch display 16. The soft switches 16d displayed on the display 16 are likewise activated by using a stylus 14 and physically and manipulatively directing the stylus to literally touch display 16. The display x, y coordinates of the touched point are known by a CPU in the PDA section of the communication system in housing 12 that can coordinate various information contained in the PDA relative to the x, y coordinate position on the display 16. Inside housing 12 is contained the conventional cellular phone elements including a modem, a CPU for use with a PDA and associated circuitry connected to speaker 24 and microphone 38. A GPS navigational receiver that receives signals from satellites that can determine the latitude and longitude of the cellular phone housing 12 can be internal or external to the housing 12. Conventional PDA/cellular phones are currently on sale and sold as a unit (or with an external connected GPS) that can be used for cellular telephone calls and sending cellular SMS and TCP/IP or other messages using the PDA's display 16 and computer (CPU). The GPS system including a receiver in housing 12 is capable of determining the latitude and longitude and through SMS, TCP/IP, WiFi or other digital messaging software, to also transmit this latitude and longitude information of housing 12 to other cellular phones in the communication network via

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cellular communications, WiFi or radio. The device 10 includes a pair of cellular phone hardware activating buttons 20 to turn the cellular phone on and 22 to turn the cellular phone off. Navigation pad actuator 18 is similar to a joy or force stick in that the actuator 18 manually provides movement commands that can be used by the PDA's software to move a cursor on display 16. Switches 26 and 28 are designed to quickly select an operator specified network software program. Speaker 24 and microphone 38 are used for audio messages. Switch 19 at the top left of device 10 is the power on and power off switch for the entire device.

The heart of the invention lies in the applicant's ACS application programs provided in the device. The ACS programs are activated by clicking on an icon on the display to turn the ACS programs on or off. Mounted within housing 12 as part of the PDA is the display 16 and the CPU. The internal CPU includes databases and software application programs that provide for a geographical map and georeferenced entities that are shown as display portion 16b that includes as part of the display various areas of interest in the particular local map section.

When looking at display 16, the software switches (soft switches) which appear at the very bottom of the display 16d are used to control by touch many of the software driven functions of the cellular phone and PDA. The soft switches are activated through the operator's use of the navigation pad 18, or a small track ball, force stick or similar hardware display cursor pointing device. Alternatively, the operator may choose to activate the software switches by touching the screen with a stylus 14 (or finger) at the switches' 16d locations. When some of the software switches are activated, different software switches appear. The bar display 16d shows the software switches "ZM IN (zoom in)," "ZM OT (zoom out)," "CENT (center)" and "GRAB (pan/grab)" at the bottom of the screen. These software switches enable the operator to perform these functions. The "SWITH (switch)" software switch at the lower right causes a matrix of layered software switches (soft switches) to appear above the bottom row of switches. Through use of the software switches, the operator can also manipulate the geographical map 16b or chart display. When looking at FIG. 1, display symbols depict permanent geographical locations and buildings are shown. For example, the police station is shown and, when the symbol is touched by the stylus or finger, the latitude and longitude of the symbol's location, as shown in display section 16c, is displayed at the bottom left of the screen. The bottom right side of display 16c is a multifunction inset area that can contain a variety of information including: a) a list of the communication link participants; b) a list of received messages; c) a map, aerial photograph or satellite image with an indication of the zoom and offset location of the main map display, which is indicated by a square that depicts the area actually displayed in the main geographical screen 16b; d) applicable status information; and e) a list of the communication net participants. Each participant user would have a device 10 shown in FIG. 1.

Also shown on the display screen 16, specifically the geographical display 16b, is a pair of different looking symbols 30 and 34, a small triangle and a small square, which are not labeled. These symbols 30 and 34 can represent communication net participants having cellular phones in the displayed geographical area that are part of the overall cellular phone communications net, each participant having the same device 10 used. The latitude and longitude of symbol 30 is associated within a database with a specific cell phone number and, if available, its IP address and email address. The screen display 16b, which is a touch screen, provides x and y coordinates of

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the screen 16b to the CPU's software from a map in a geographical database. The software has an algorithm that relates the x and y coordinates to latitude and longitude and can access a communications net participant's symbol or a fixed or movable entity's symbol as being the one closest to that point.

In order to initiate a telephone call to the cellular phone user (communication net participant) represented by symbol (triangle) 30 at a specific latitude and longitude display on chart 16b, the operator touches the triangle 30 symbol with the stylus 14. The operator then touches a "call" software switch from a matrix of displayed soft switches that would overlay the display area 16c. Immediately, the cellular phone will initiate a cellular telephone call to the cellular phone user at the geographical location shown that represents symbol 30. A second cellular phone user (communication net participant) is represented by symbol 34 which is a small square (but could be any shape or icon) to represent an individual cellular phone device in the display area. The ring 32 around symbol 30 indicates that the symbol 30 has been touched and that a telephone call can be initiated by touching the soft switch that says "call." When this is done the telephone call is initiated. Other types of symbolic elements on the display 16 can indicate that a cellular phone call is in effect. Additionally, the operator can touch both symbol 34 and symbol 30 and can activate a conference call between the two cellular phones and users represented by symbols 30 and 34. Again, a symbolic ring around symbol 34 indicates that a call has been initiated.

Equally important, a user can call the police station or any other specific geographical facility displayed on the map, including: buildings, locations of people, vehicles, facilities, restaurants, etc., whose cellular phone numbers and, if available, E-mail addresses, W addresses and their URLs (previously stored in the database) by touching a specific facility location on the map display using the stylus 14 and then touching the cellular phone call switch. As an example, the operator can touch and point to call a restaurant using a soft switch by touching the restaurant location with a stylus and then touching the call soft switch. The cellular phone will then call the restaurant. Thus, using the present invention, each participant can touch and point to call to one or more other net participants symbolically displayed on the map, each of whom has a device as shown in FIG. 1 and can also point to call facilities that had been previously stored in the phone's database. Furthermore, this symbol hooking and soft switch technique can be used to go to a fixed facility's website or to automatically enter the fixed facility's E-mail address in an e-mail.

Each cellular phone/PDA/GPS user device is identified on the map display of the other participant user phone devices by a display symbol that is generated on each user phone display to indicate each user's identity. Each symbol is placed at the correct geographical location on the user display and is correlated with the map on the display. The operator of each cellular phone/PDA/GPS device may also enter one or more other fixed entities (buildings, facilities, restaurants, police stations, etc.) and geo-referenced events such as fires, accidents, etc. into its database. This information can be likewise transmitted to all the other participants on the communications net. The map, fixed entities, events and cellular phone/PDA/GPS device communication net participants' latitude and longitude information is related to the "x" and "y" location on the touch screen display map by a mathematical correlation algorithm.

When the cellular phone/PDA/GPS device user uses a stylus or finger to touch one or more of the symbols or a location displayed on the cellular phone map display, the system's

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software causes the status and latitude and longitude information concerning that symbol or location to be displayed. In order to hook a symbol or "track" such as another net participant which represents an entity on the geo-referenced map display, or a fixed geographical entity such as a restaurant, police station or a new entity observed by a cell phone user which is discussed below, the operator points at or near the location of a geo-referenced symbol appearing on the cellular phone/PDA display that represents a specific track or specific participant or other entity. The hook application software determines that the stylus is pointed close to or at the location of the symbol and puts a circle, square or other indication around the symbol indicating that amplification information concerning the symbol is to be displayed and indicating that additional data or change in data can be made to the indicated symbol. The hook application code then sends a message to the display application code to display the net participant, facility or entity's amplifying data. The display application code retrieves the primary data and amplification data concerning the symbol or entity from the database and displays the information at the correct screen location. The operator can then read the amplification data that relates to that specific symbol at the specific location. The cell phone operator can also select soft switches on the touch screen display to change the primary data and amplification data. Furthermore, the operator can use a similar method of hooking and selecting to activate particular soft switches to take other actions which could include: making cellular phone calls, conference calls, 800 number calls; sending a free text message, operator selected preformatted messages, photographs or videos to the hooked symbol; or to drop a entered symbol.

Each known net participant has a cellular phone number, IP address and, if available E-mail address that is stored in each participant's device database.

To use the communication system, a user starts the PDA/cellular phone device system by turning on the cell phone power and selecting the cell phone and network software which causes: a) the cellular phone to be activated (if it has not already been activated); b) the GPS interface receiver to be established; c) a map of the geographic area where the operator is located and operator's own emit symbol to appear at the correct latitude and longitude on the map on the display; d) the locations of fixed facilities such as restaurants, hotels, fire departments, police stations, and military barracks, that are part of the database to appear as symbols on the map; e) the device selected item read out area which provides amplification information for the communications net participants or the entity that has been hooked (on the display screen) to appear on the display; f) an insert area that contains various data including: the list of net participants, a list of messages to be read, an indication of what portion of the map is being displayed in major map area and other information to appear on the display; and g) a row of primary software created "soft switches" that are always present on the display to appear.

For point to call network units and fixed facilities, the application code detects the x, y display screen location of the symbol that is designated by the user's stylus and translates the x, y coordinates to latitude and longitude and then: (1) searches the database to find the symbol at that location, (2) places a "hook" indicator (a circle, square or other shape) around the symbol, (3) displays any amplifying data and (4) obtains the symbol's associated phone number (or for VoIP calls an IP address) from the database. Upon receiving a "call" designation from the soft switch, the operator's device's ACS causes the appropriate phone number or IP number to be called. Upon receiving an indication that the phone number is being called, the application code places a



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box around the symbol (color, dashed or the like). When the call is connected, the box changes to indicate that the connection is made. When the other party hangs up, the box disappears.

As each of the cell phone participants reports its identity, location and status to the other participants' devices, the received data is geo-referenced and filed in their databases that are accessible by identity and by location. This data is then displayed on each cell phone display. When a request for data is received by touching the display screen, a location search is made by the ACS and a symbol modifier (circle, square, etc.) is generated around the symbol closest to the x, y position of the stylus. When the application code receives a soft switch command to place a phone call or send data, the software uses the phone number (or IP address) associated with the unit to place the call or to send data.

If a cell phone device receives a digital message that a call is being received, the receiving cell phone's ACS application code places a box or similar object around the transmitter symbol indicating who the call is from. When the call is answered, the application software changes the visual characteristics of the box. In a similar manner, when a phone receives a digital text message, photograph or video, a box appears around the transmitter's symbol indicating the transmitter of the message. The point to call network devices are participants and each one has a similar device with the same software for use as a total participant network. Other situations for calling facilities that are not part of the network are described below.

Thus, a user is capable of initiating a cellular phone call by touch only, and initiating conference calls by touching the geo-referenced map symbols. Furthermore, by using a similar symbol touching technique, a cellular phone can send user selected messages to cause a remote cellular phone to display and optionally announce emergency and other messages and to optionally elicit a response from the remote cellular phone.

All of the network participants have the same communication cell phone/PDA/GPS device described herein. The method and system include the ability of a specific user to provide polling in which other cellular phones, using SMS, internet or WiFi, report periodically based on criteria such as time, speed, distance traveled, or a combination of a time, speed and distance traveled. A user can manually poll any or all other cell phone devices that are used by all of the participants in the communication network having the same devices. The receiving cellular phone application code responds to the polling command with the receiving cellular phone's location and status which could include battery level, GPS status, signal strength and entered track data. Optionally, the phone operators can set their phones to report automatically, based on time or distance traveled intervals or another criterion.

The soft switch application software causes a visual display of a matrix such as five across by six up (or another matrix) in which switch names are placed on the cellular/PDA display. The soft switch network application software knows the touch screen location of each of the switches in the matrix and the software routines that will be activated upon touching the switch.

The bottom row of soft switches displayed on the touch screen remains visually fixed. These switches concern the functions that are the most often used. One of the switches causes a matrix of other soft switches to appear above the visually fixed soft switches. These switches are function soft switches, the activation of any one of which causes a different matrix of soft switches to appear, which are known as the action soft switches. When the action soft switches appear, the function soft switch, which caused the action soft

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switches to appear, itself appears as a label in the lower left (or some other standard location) indicating to the operator the function soft switch that has been selected. When the operator selects an action soft switch, the appropriate application software to accomplish the action is activated.

Upon receiving a soft switch activation message, the ACS accesses the appropriate task execution software which accomplishes the required tasks including: entry of track data, entry of track amplification data, transmission of alpha/numeric messages, photographs, videos, display of messages to be read, selection of map types, placing voice calls, placing conference calls and 800 conference calls, presenting different potential operator selections, control of the display actions, polling network participants, establishing nets of participants (groups) so that communications with all in the group can be accomplished with a single soft switch action, and dropping a previously entered track. By providing a matrix and layers of soft switches which are easily manipulated by a stylus, each cell phone device in the communication network is extremely efficient in accessing and coordinating the appropriate application program for the device to perform.

Referring now to FIGS. 2a through 2d, there are several ways that the network can be configured for participant inclusion into a network where all in the network have a cell phone PDA and advanced communications software (ACS) including:

FIG. 2a POLLING. To initialize the communications net, a user selects, from a list, the other users (or all of them), that the user desires to be part of the communications net. The user then "polls" the selected phones to activate by sending a poll message to the server which then relays it to the recipient to become part of the communications net. The polled cell phone then transmit its GPS or entered location and status to all the other phones in the established net. The other established net participants to report their location identity and status information to the polled phone. Through interaction with one or more other ACS enabled cellular phones, symbols are generated on the operators' displays based on the participants' latitude and longitude that is exchanged between the cellular phones. The transmission of this information is based on an algorithm, which considers time and/or movement, or which is based upon a polling request.

FIG. 2a shows a flow chart of a method for providing a polling network among the network's identification, location, status reporting participants. The ACS "polling" mode requires that at least one ACS network participant has the phone numbers or the license address of the ACS network participants who can be polled. The ACS user with the data selects to operate in a polling mode. The ACS user decides to locate and communicate with another ACS network participant with a known phone number or a license address. The ACS user operator selects the unit to be polled from a list of potential network participant(s) which causes a "start reporting" SMS message to be sent to the selected unit. The selected ACS network participant receives the polling message which causes it to report to the IP server according to time, distance traveled, an input from a sensor or when polled. The server receives the new network participant's data and relays it to all others on the ACS network. Each ACS network participant who has been previously polled then commences to report its identity and location and status data through the server to the new network participant. Each ACS cell phone PDA receives the other ACS user's identity, status and location data and displays it.

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FIG. 2b shows a flow chart of a method that provides an "all report" network among the network's identification, location, status reporting participants.

The "all report" mode requires that each ACS user's phone send its identity, status and location data and an identifier to the server. Upon receiving data from the new ACS "all report" network participant, the server transmits the participant's identity, status and location data to all active ACS net participants in the "all report" network. Upon receiving the new ACS network participant's identity, location and status message, the existing ACS network participants detect that it is a new ACS network participant and transmit their identity, location and status data to the server to be relayed to the new ACS participant. ACS program participants transmit their data to the server according to time, distance traveled, or an input from a sensor or when polled. Each ACS network participant receives the other ACS network participant's identity, status and location data and displays it.

FIG. 2c shows a flow chart of a method that provides a "common interest" network among the network's identification, location, and status reporting participants. The ACS "common interest" mode requires that, when transmitting, the user's phone sends its identity, status, location phone number and, alternatively, its license data and its interest group (singles, stamp collectors, fire department, etc.) to the server. When the server receives the ACS identity, location and status report, the server then transmits the data to all others who have identified themselves as being part of that particular ACS "interest group" (singles, stamp collectors, fire department, etc.). Upon receiving the new group participant's report from the server, all in the group report their data to the server. The server retransmits the data to the new ACS network participant. Network participants transmit their data to the server according to time, distance traveled, an input from a sensor or when polled. Each user receives the other user's identity, status and location data and displays it.

FIG. 2d shows a flow chart of a method that provides a "friends and family" network among the network's identification, location, and status reporting participants. The ACS "friends and family" mode requires that initially each network participant or the server has in its database the phone numbers or license data of each of the ACS "friends and family" network participants. As each member of the ACS "friends and family" network sign on to the server, its data is only sent to the network participants that are part of its friends and family group. Upon receiving the friends and family report from an ACS network participant, the server determines which ACS friends and family group the report is from and then sends the received identity, location, status, telephone number and IP address only to the members of that group. Upon receiving the report from the new ACS group participant, all in the ACS group report their data to the server addressed to the new ACS group participant. ACS network participants transmit their data to the server addressed to all friends and family ACS network participants according to time, distance traveled, an input from a sensor or when polled. Each ACS network participant receives the other user's identity, status and location data and displays it.

Referring now to FIG. 3a, the user participant network, and particularly the cell phone, can also be used as a dating network to establish social relationships with strangers. The process can involve contacting other network participants who have chosen through the ACS to participate in a cell phone network social/dating interactive communication network. FIG. 3a describes the social/dating network. The ACS operator has a cell phone/PDA/GPS unit equipped with specific ACS software for the social dating interaction and to

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begin would turn on his or her phone and select the ACS dating service. At that point, the dating interest group network application software is activated on the operator's cell phone. If this is the first time the operator has selected the dating ACS, a menu will come up that asks the ACS operator to enter personal data. The operator can take a photograph of himself or herself and specify that the photograph is to be attached to the operator's display symbol. The operator also enters his or her phone number (used by the server) if not available to the ACS and dating network name. At this point, the operator is prompted to fill in a pre-established personality information form on his or her cell phone display that includes, among other things, age group, sex, race, marital status, interest area, etc., each of which can have a preassigned symbol type and color. The operator can also enter his or her dating group B-mail address and the URL associated with his or her Myspace or similar web dating URL. When the operator's personal data entry has been entered, he or she is prompted to enter his or her dating interest criteria including sex, age group, race, marital status, interest area, etc.

Once the ACS operator has completed entering the dating criteria, the cell phone's GPS's output data causes the operator's symbol to appear superimposed on a map at the correct latitude and longitude. The symbol, associated photograph, and entered personal information is transmitted to the ACS server from which it is retransmitted (minus the phone number) to other ACS dating interest group participants who have signed onto the network through the ACS dating software. The operator's symbol which can be indicative of his or her sex, age group, race, etc., then appears on the other dating group displays. The server then transmits the other dating interest group participants, their associated photographs and entered personal information to the ACS operator. The operator's dating ACS superimposes the received symbols on the displayed map.

Referring now to FIG. 3b, which is a continuation of the flow chart from FIG. 3a, the dating criteria is used by the operator's ACS to display dating symbols that correspond to the operator's entered dating criteria. The ACS cell phone operator can then either: (a) hook a displayed symbol which causes the photograph and the pre-formatted data associated with the symbol to appear on the ACS operator's display or (b) select to display a thumb nail grouping of photographs of symbols in his or her vicinity that meet his or her criteria. The ACS operator can then select a thumb nail photograph of the person that he or she desires to view as a large photograph, by touching it on the display. If the ACS operator then desires to see the location of the person associated with the photograph, he or she selects a soft switch that is drawn on the display, which causes the photograph to collapse and the geo-reference symbol associated with the photograph to appear on his or her display. The ACS operator can then either:

(a) send a free text message, a pre-formatted message, photographs or video to the hooked ACS participant symbol by pointing at or "hooking" the symbol which enables the operator's ACS to know how to address the data to the server. Since only the server knows the IP address of the symbol, the ACS operator can establish these communications without actually knowing the other network participant's actual name, address, phone number, E-mail or IP address, thus allowing for a completely anonymous exchange of data. When the data is sent to the addressee, the server also sends a symbol modifier that is associated with the sender. The symbol modifier causes a box or other indication to appear

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around the sender's symbol, thus permitting the receiving party to know to which symbol to respond to if that is their desired action.

(b) hook the symbol and select a voice call soft switch which automatically causes the cell phone to send a digital message to the server requesting the phone number of the hooked symbol. Upon receiving the message, the server digitally transmits the phone number to be called to the requesting phone's ACS which does not display the phone number to the operator but, rather, makes a call to a commercial 800 number call bridge and sends the bridge the billing password and the phone number to be called. The 800 bridge then calls the phone number of the hooked symbol. When the recipient answers the call, the 800 calling bridge number appears on the recipient's display and a box or other modifier then appears around the symbol of the calling phone, thus permitting establishment of anonymous voice communications where neither party knows the phone number of the other party while also permitting the recipient to know the caller's location and his entered personal data and enabling the recipient to selectively later respond by either returning the voice call or sending text messaging.

(c) select to view the hooked symbol's Myspace or similar dating service URL by hooking the symbol and selecting the access URL soft switch which causes the ACS to access the symbol's URL and to display the data associated with the URL. Upon closing the web site associated with the URL, the ACS map and associated super-imposed map display again appears.

Referring now to FIG. 3c, the last portion of the flow chart begun in FIGS. 3a and 3b is shown. At this point, the ACS operator is provided the ability to hook a symbol and select a "block" soft switch. The block soft switch blocks free text message, pre-formatted message, photographs or video received from a particular symbol from being processed. When message traffic is received from the "blocked" symbol the operator's ACS discards the received data and optionally sends an E-mail to the sender that their data has been blocked or discarded. This is the rejection mode. Furthermore, the block command can cause a received voice call from the sender to go to the phone's voice message box in lieu of having to answer the call.

The ACS operator is able to assign different types and colors of symbols to substitute for previously contacted symbols so that when the previous contacted symbol is on-line the symbol would appear with a selected symbol type or color rather than the transmitted symbol type and color.

The ACS operator is able to view all online symbol dating network names in a list. The ACS operator can then select a name from the list by pointing at it which will cause the symbol associated with the name to be hooked on the display and the photograph (if available) and personnel data associated with the name to appear on the display.

Finally, the ACS operator is able to view a list of all previously contacted dating names that have responded to either his or her communications. The operator is then able to send an E mail to that dating name by touching the location of the name. This action will cause an E mail form to be filled in addressed to the dating name. When the ACS operator has created the E mail, it is sent to the ACS server which addresses the E mail to the actual E mail address of the owner of the dating service name.

Thus, it can be seen that using a cell phone with specialized advanced communication software as described herein, a network of participants can individually communicate with each

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other or specific groups or types of people and can establish selectable anonymous relationships.

The instant invention has been shown and described herein in what is considered to be the most practical and preferred embodiment. It is recognized, however, that departures may be made there from within the scope of the invention and that obvious modifications will occur to a person skilled in the art.

What is claimed is:

1. A method of communicating among a group of participants each having a communication device that includes a touch display screen, a global positioning system, and advanced communications software, comprising the steps of:

- establishing, over a private remote server excluding a website or a web browser, a communications network among the communication devices whereby the participants are capable of exchanging and displaying identity data, location data, status data, and personal data through the advanced communications software;
- providing, over the communications network, at least one of the participants with the identity data of at least one of the other participants;
- establishing a polling network comprising at least one of the participants by selecting, through the advanced communications software, the identity data that includes a phone number corresponding to that participant;
- sending, through the advanced communications software, a SMS polling message to each of the participants of the polling network;
- in response to receiving the SMS polling message, the polled unit continuously and automatically transmitting according to a set time interval, distance traveled, or sensor input, at least its identity and location data to the private remote server using IP communications to the pre-stored server address contained in the ACS software;
- each time the polled participant's data is received, the private remote server transmitting to each of the other participant devices in IP communications with the server, at least the identity data and the location data of each of the participants, on the polling network, without any selection criteria or manual input of relationship data; and
- displaying, on the touch display screen of each communication device, at least the identity data and the location data of each of the participants of the polling network.

2. The method of claim 1, wherein the location data of the participant is generated by the global positioning system of the participant's communication device and is used to automatically report according to a set time interval and/or distance traveled.

3. The method of claim 1, wherein the location data of each of the participants of the polling network is displayed on the touch display screen as a geo-referenced symbol on a map.

4. A method of communicating among a group of participants each having a communication device that includes a touch display screen, a global positioning system, and advanced communications software, comprising the steps of:

- establishing, over a private remote server excluding a website or a web browser, a communications network among the communication devices whereby only the network participants with a common interest are capable of exchanging and displaying identity data, location data, status data using IP communications to the address contained in the ACS software ;
- each network participant automatically transmitting according to a set time interval, distance traveled, or sensor input, at least its identity and location data to the

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- private remote server using IP communications and having a pre-stored address contained in the ACS software;
- c. establishing, on the private remote server, a common interest network comprising every participant having common interest data matching the common interest data of the requesting participant;
  - d. each time network participant data is received the private remote server automatically transmitting to each of the other devices in IP communications with the server with the same common interest, at least the identity and, location data of each of the participants, in the common interest network without any selection criteria or manual input of relationship data; and
  - e. displaying, on the touch display screen of each communication device of each participant in the common interest network, at least the identity data and the location data of each participant in the common interest network.

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5. The method of claim 4, wherein the location data of the participant is generated by the global positioning system of the participant's communication device and is used to automatically report to the private remote server according to a set time interval and/or distance traveled.

6. The method of claim 4, wherein the location data of each of the participants of the common interest network is displayed on the touch display screen as a geo-referenced symbol on a map.

7. The method of claim 4, wherein the common interest data identifies a group of friends.

8. The method of claim 4, wherein the common interest data identifies a group of family members.

\* \* \* \* \*



# **EXHIBIT 5**

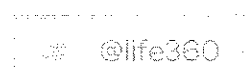
**TO  
COMPLAINT FOR FALSE  
MARKING, TORTIOUS  
INTERFERENCE WITH  
CONTRACT, INTENTIONAL  
INTERFERENCE WITH  
ECONOMIC ADVANTAGE, AND  
UNFAIR COMPETITION**



Life360 Inc.

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# ADT and Life360 Partner to Expand Out-of-Home Protection, Networking and Automation to Deliver Seamless, Personal Security via Mobile

*ADT Invests \$25M of \$50M Series C Financing to Establish Minority Stake in Life360*

BOCA RATON, Fla.-(BUSINESS WIRE)—May 13, 2014— Leading security and home automation provider **ADT** (NYSE:ADT) today announced a partnership with Life360, a leader in location-based services and family networking technology. The partnership will provide a valuable lead generation source for ADT and enable the development of innovative, co-branded mobile security applications to provide greater safety and security services to families. As part of the agreement, ADT is taking a minority ownership stake in the company through a \$25 million investment, leading a \$50 million Series C financing for Life360. The investment

forges a mutually beneficial bond for the two companies to work together to advance personal security solutions available to the more than 33 million families who use Life360.

“We’ve expanded beyond helping protect and connect homes and businesses,” said Arthur Orduña, senior vice president and chief innovation officer for ADT. “Today, ADT provides security and monitoring solutions for families wherever they are. This partnership with Life360 fits within our innovation strategy to reinvent the idea of ‘security’ for our increasingly mobile lifestyles. It’s a perfect pairing as ADT and Life360 are both leaders in their categories that share a very similar vision and mission – to provide peace of mind to families.”

One planned development from the partnership is a new mobile application that will integrate features from ADT Chaperone, an existing ‘on-the-go’ personal security offering from ADT. The upcoming mobile application from ADT and Life360 will provide direct access to ADT’s 24/7 monitoring centers that can connect users to police, fire and emergency medical responders. “Soon every family will be able to use the app to meet their unique needs, whether it’s providing a chaperone for a child walking home from school and verifying they reached their destination, or knowing to arm the home’s security system when the house is vacant,” added Orduña.

By leveraging the best of ADT and Life360 technologies, users will feel relaxed knowing their families can check in with the touch of a button, rather than having to make a call, or take a break to contact their loved ones. Users will not only have greater peace of mind while on the go, but also gain the added convenience of home automation, including control of lights, door locks and more, directly from their mobile phone.

“The investment and partnership with ADT further cements Life360’s position as the leading family network, and allows us to deepen our reach into the connected home,” said Chris Hulls, Life360 founder and chief executive officer. “Mobile is at the center of the connected home, and given security is a critical element for today’s families, our integration with ADT offers customers the value of one of the world’s largest security and home automation providers, plus the connectivity of the largest family network.”

The new co-developed mobile application will be available in late 2014. The app will be free, and upgraded security features from ADT will be available at a nominal monthly subscription fee.

For more information, visit [www.ADT.com](http://www.ADT.com) and [www.Life360.com](http://www.Life360.com).

### About ADT

ADT Security Services is a leading provider of electronic security, interactive home and business automation and monitoring services for residences and small businesses in the

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United States and Canada. ADT's broad and pioneering set of products and services, including ADT Pulse® interactive home and business solutions, and health services, meet a range of customer needs for today's active and increasingly mobile lifestyles. Headquartered in Boca Raton, Florida, ADT helps provide peace of mind to more than six million customers, and it employs approximately 16,000 people at 200 locations. More information is available at [www.adt.com](http://www.adt.com).

### About Life360

Life360 is the leading location and communication app for families available for Android and the iPhone. Using location-based technology, Life360 enables families to share their locations, know when someone needs help and communicate easily with in-app messaging. The app operates in a convenient and secure way that does not interfere with busy schedules or personal freedom. Founded in 2008, Life360 placed first in Google's Android Developer Challenge in that same year and has received funding from several prominent investors.

Source: ADT

ADT Media Relations Jason Shockley, 561-322-7235 [jshockley@adt.com](mailto:jshockley@adt.com) or Life360 Media Relations Julie Mullins, 650-387-0486 [Julie@life360.com](mailto:Julie@life360.com)

Life360 Inc., May 13, 2014

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